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J952-51

MEDICAL TECHNOLOGY UNDER PROPOSALS TO INCREASE COMPETITION IN HEALTH CARE

OCTOBER 1982

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CONGRESS OF THE UNITED STATES
Office of Technology Assessment
Washington, D.C. 20510

Library of Congress Catalog Card Number 82-600646

For sale by the Superintendent of Documents,
U.S. Government Printing Office, Washington, D.C. 20402

Foreword

This report on *Medical Technology Under Proposals To Increase Competition in Health Care* was prepared in response to requests by the House Committee on Energy and Commerce and the Senate Committee on Labor and Human Resources. In the context of the OTA report *Strategies for Medical Technology Assessment,* the Committees expressed interest in a separate analysis of the implications for the use of medical technology of proposals to promote competition in the financing and delivery of medical care.

This report was prepared by OTA staff. In preparing it, OTA consulted with members of the advisory panel for the study and with other experts in health policy, economics, health administration, and medicine. Drafts of the final report were reviewed by the advisory panel, chaired by Dr. Lester Breslow; the Health Program Advisory Committee, chaired by Dr. Sidney S. Lee; and other individuals and groups with expertise in the area. We are grateful for their assistance.

John H. Gibbons

JOHN H. GIBBONS
Director

Advisory Panel On Medical Technology Under Proposals To Increase Competition in Health Care

Lester Breslow, *Chair*
School of Public Health, University of California, Los Angeles

Morris Collen
Director of Technology Assessment
Kaiser-Permanente Medical Care Program
Oakland, Calif.

Alain Enthoven
Graduate School of Business
Stanford University
Stanford, Calif.

Rashi Fein
Center for Community Health and Medical Care
Harvard Medical School
Boston, Mass.

Harvey Fineberg
School of Public Health
Harvard University
Boston, Mass.

Marie Henderson
Formerly, Division of Prepaid Group Plans
Federal Employees Health Benefits Program
Washington, D.C.

David Horner
Orthopedic Surgeon
Inglewood, Calif.

Robert Krughoff
Washington Consumers' Checkbook
Washington, D.C.

Mark Pauly
Department of Economics
Northwestern University
Evanston, Ill.

Louise Russell
The Brookings Institution
Washington, D.C.

Lisbeth Bamberger Schorr
Maternal and Child Health Department
University of North Carolina
Chapel Hill, N.C.

Herbert Semmel
Consumer Coalition for Health
Washington, D.C.

Robert Sigmond
Advisor on Hospital Affairs
Blue Cross and Blue Shield Association
Philadelphia, Pa.

Jacob Spies
Health Policy Institute
Boston University
Boston, Mass.

Kenneth E. Warner
School of Public Health
University of Michigan
Ann Arbor, Mich.

Richard Watkins
Staff Physician
Group Health Cooperative
Seattle, Wash.

OTA Staff—Medical Technology Under Proposals To Increase Competition in Health Care

H. David Banta, *Assistant Director, OTA*
Health and Life Sciences Division

Clyde J. Behney, *Health Program Manager*

Jane E. Sisk, *Project Director*
John C. Langenbrunner, *Analyst*
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Principal Contractors

Peggy McManus, *Institute for Health Policy Studies, University of California, San Francisco, Washington, D.C. Office*
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John R. Kimberly, *Health Systems Management Group, Yale University*
Judith E. Randal, *Consultant, Washington, D.C.*

OTA Publishing Staff

John C. Holmes, *Publishing Officer*
John Bergling Kathie S. Boss Debra M. Datcher Joe Henson

Acknowledgments

This report has benefited from the advice and review of the Health Program Advisory Committee and several other people in addition to the Advisory Panel. The staff especially wishes to thank Bryan R. Luce, who was Project Director for the OTA report *Strategies for Medical Technology Assessment* and is now Director of the Office of Research and Demonstrations, Health Care Financing Administration, for his contributions during the early part of this study. The staff would also like to express its appreciation to the following people for their valuable guidance.

Alvin Ankrum, Baltimore City Professional Standards Review Organization, Inc.
George Bowers, General Accounting Office, U.S. Congress
James Bryson, U.S. Office of Personnel Management
Mark Epstein, Health Systems Agency of Northern Virginia
Robert Erikson, Kaiser-Permanente Medical Care Program
Marsha Gold, Department of Health and Mental Hygiene, State of Maryland
Bradford Gray, Institute of Medicine, National Academy of Sciences
Lawrence Green, Harvard School of Public Health
Elizabeth Hilder, Federal Trade Commission
Kathryn Kelley, President's Commission for Study of Ethical Problems in Medicine and Biomedical and Behavioral Research
Saul Kilstein, Health Care Financing Administration, U.S. Department of Health and Human Services
Mark Kleiman, Consumer Coalition for Health
Daniel Koretz, Congressional Budget Office
Harold Luft, Institute for Health Policy Studies, University of California, San Francisco
Patricia Mullan, Office of Health Information and Health Promotion, U.S. Department of Health and Human Services
Samuel Meyers, National Center for Health Services Research, U.S. Department of Health and Human Services
Terri Louise Nally, American Chemical Society
Donna Potemkin, Intergovernmental Health Policy Project, George Washington University
Lisa Potetz, Congressional Budget Office
Patrick J. Riley, National Federation of Federal Employees
Valerie Riley, Blue Cross-Blue Shield Association
Louis F. Rossiter, National Center for Health Service Research, U.S. Department of Health and Human Services
Arnold J. Rossoff, University of Pennsylvania
Judith Sangl, Health Care Financing Administration, U.S. Department of Health and Human Services
Helen Schauffler, A.D. Little, Inc.
Robert Silva, Health Care Financing Administration, U.S. Department of Health and Human Services
Fred Wegner, American Association of Retired Persons and National Retired Teachers Association
Donald Whitehall, General Accounting Office, U.S. Congress

Contents

Chapter *Page*

Glossary of Terms ix
Glossary of Acronymns xi

1. Introduction and Summary 3
2. Increased Competition: Proposals and Concepts 17
3. Effects of Increased Competition on the Use and Innovation of Medical Technology 31
4. Effects of Increased Competition on the Quality of Care 55
5. Consumer Information Under Increased Competition 71

Appendixes

A. Method of the Study 83
B. Health Program Advisory Committee 84
C. Federal Employees Health Benefits Program 85
D. Selected Regional Examples of the Effects of Alternative Delivery Systems 107
E. California Prepaid Medi-Cal Health Plans 118
F. Supplementary Medical Insurance for Medicare Beneficiaries 120
G. Health Systems Agency of Northern Virginia 129
H. Baltimore City Professional Standards Review Organization 132
I. Other Models of Information Disclosure: Truth-In-Lending Act and Securities and Exchange Commission 135

References 141
Index 155

Glossary of Terms

Alternative delivery system: An organization that delivers medical care in a manner alternative to fee-for-service solo practice. The term most frequently refers to prepaid group practices.

Ancillary technology: Medical technology used directly to support clinical services, including diagnostic radiology, radiation therapy, clinical laboratory, and other special services.

Capitation: The method of paying for medical care by means of a prospective per capita payment that is independent of the number of services received.

Clinical technology: Medical technology used in the provision of direct patient care, including medical and surgical procedures.

Coinsurance: A form of cost sharing whereby the insured pays a percentage of total cost. (Also see *copayment.*)

Community rating: A method whereby the insurer bases the premium rate on the average costs of all subscribers in a specific industry or catchment area, and all individuals pay the same rate. Community rating spreads the cost of illness evenly over all the subscribers and does not charge higher rates to those currently or chronically less healthy than the average person.

Competition: In the present context of medical care, the term refers to greater price sensitivity or cost consciousness on the part of consumers, physicians, hospitals, and other medical providers.

Comprehensive health care organization: Organizations that provide or arrange the delivery of comprehensive health services for enrollees. Like prepaid group practices, these organizations integrate the functions of insuring people against risks and delivering medical care, but they may vary in structure and payment method.

Copayment: A form of cost sharing whereby the insured pays a specific amount at the point of consumption, e.g., $10 per visit. (Also see *coinsurance.*)

Cost sharing: The general set of financing arrangements whereby the consumer must pay some out-of-pocket cost to receive care, either at the time of initiation of care, or during the time of the provision of health care services, or both.

Deductible: A form of cost sharing in which the insured incurs an initial expense of a specified amount within a given time period (e.g., $250 per year) before the insurer assumes liability for any additional costs of covered services.

Experience rating: A method of pricing used by the insurance industry that bases premiums on the average projected costs of health care for different consumer subgroups. The premiums are a function of experience of the group and subgroups and are affected by such variables as age, sex, and income, as well as health status, use and cost.

Fee-for-service: A method of paying for medical care on a retrospective basis by which each service received by an individual bears a related charge.

Group practice: Three or more physicians formally organized to provide medical care through joint use of facilities and distribution of income according to a predetermined arrangement.

Health care alliance (HCA): An alternative health insurance model whereby insurance companies or employers would join with efficient providers into a single plan. Unlike the health maintenance organization concept of a single organization insuring and providing care, however, the HCA would offer a clear separation between insurer and provider. Like the individual practice association, the HCA would not place the physicians at financial risk if the plan were to fail.

Health maintenance organization (HMO): An organization that acts as both insurer and provider of comprehensive but specified medical services by a defined set of physicians to a voluntarily enrolled population paying a prospective per capita amount. Prepaid group practices and individual practice associations are types of HMOs.

Indemnity benefit plan: A type of insurance plan that generally provides coverage of expenses through reimbursement to the patient for charges by doctors, hospitals, and other providers of medical care.

Individual practice association (IPA): A type of HMO whose physicians usually continue to practice in a private office on a fee-for-service basis. Members pay the umbrella organization capitation payments for covered services.

Managerial technology: Technology used to facilitate and support the provision of health care services but not directly associated with patient care, including administration, transportation, and communication, both within and among health care facilities.

Medical technology: The drugs, devices, medical surgical procedures used in medical care, and the organizational and supportive systems within which such care is provided. Medical technology includes ancillary, clinical, and managerial technologies.

Method of payment: The description of how and when a provider is compensated for health care services rendered. The main variations for physicians are fee-for-service and capitation.

Preferred provider organizations (PPO): An alternative delivery system of physicians and hospitals who have been identified as low-cost providers. They are alined with self-funded employers who assume all of the risk. Claims are paid by an independent intermediary and reimbursement is on retrospective, fee-for-service basis.

Prepaid group practice: A group practice that provides or arranges comprehensive covered services for enrollees, who pay by capitation. (See *health maintenance organizations.*)

Primary care network: A type of alternative delivery system based on primary care physicians, who provide all primary care directly and supervise referrals and other care including hospitalization for each enrollee. The participating primary care physician receives a capitation payment to cover her/his own services and is at some risk for other use as well.

Service benefit plan: A type of insurance plan that generally pays for enrollees' medical expenses through direct, retrospective payment to participating physicians, hospitals, and other providers.

Vertical integration: The broadening of services within a firm (or practice) to include those formerly provided by the firm's buyers or suppliers.

Glossary of Acronyms

AB	Aid to the Blind (DHHS)
AFDC	Aid to Families With Dependent Children (DHHS)
ALOS	average length of stay
AMA	American Medical Association
APR	annual percentage rate
ATD	Aid to the Totally Disabled (DHHS)
BC/BS	Blue Cross/Blue Shield
CBO	Congressional Budget Office (U.S. Congress)
CCU	coronary care unit
CFR	Code of Federal Regulations
CHAMPUS	Civilian Health and Medical Programs of the Uniformed Services (DOD)
CON	certificate of need
CSC	Civil Service Commission (now Office of Personnel Management)
CT	computed tomography
DHEW	Department of Health, Education, and Welfare (now DHHS)
DHHS	Department of Health and Human Services (formerly DHEW)
DOD	Department of Defense
DRG	diagnostic-related grouping
EKG	electrocardiogram
ESRD	end-stage renal disease
FDA	Food and Drug Administration (DHHS)
FEHBP	Federal Employees Health Benefits Program (OPM)
FFS	fee-for-service
FTC	Federal Trade Commission
GAO	General Accounting Office (U.S. Congress)
GEHA	Government Employees Health Association
GHA	Group Health Association
GHAA	Group Health Association of America
GHC	Group Health Cooperative
GHCPS	Group Health Cooperative of Puget Sound
GI	gastrointestinal
GNP	gross national product
GVGHA	Genessee Valley Group Health Association
HCA	health care alliance
HCFA	Health Care Financing Administration (DHHS)
HCP	health care plans
HIP	Health Insurance Plan of New York
HMO	health maintenance organization
HMOM	HMOMinnesota
HMSA	Hawaii Medical Service Association
HRG	Health Research Group
HSA	Health Systems Agency
HSCRC	Health Services Cost Review Commission
ICU	intensive care unit
IHPP	Intergovernmental Health Policy Project (The George Washington University)
IOM	Institute of Medicine (National Academy of Sciences)
IPA	individual practice association
MARP	Maryland Admissions Review Program
MCE	Medical Care Evaluation Study (PSRO)
MOS	Medigap Operations Staff
NAIC	National Association of Insurance Commissioners
NAS	National Academy of Sciences
NCHSR	National Center for Health Services Research (DHHS)
NHI	national health insurance
NMC	National Medical Care, Inc.
OAS	Aid to Old Age Survivors (DHHS)
OPM	Office of Personnel Management (formerly Civil Service Commission)
OTA	Office of Technology Assessment (U.S. Congress)
PCN	primary care network
PGP	prepaid group practice
PHP	Prepaid Health Plan
PPI	patient package insert
PPO	preferred provider organization
PSRO	Professional Standards Review Organization
R&D	research and development
RAHMO	Rochester Area Health Maintenance Organization
RHN	Rochester Health Network
RO	Regional Office (HCFA)
SEC	Securities and Exchange Commission
SHPDA	State Health Planning and Development Agency
SMSA	Standard Metropolitan Statistical Area
TA	technology assessment
UCR	usual, customary, and reasonable charges
UR	utilization review
VA	Veterans Administration

1.

Introduction and Summary

There is nothing more difficult to take in hand, more perilous to conduct, or more uncertain in its success, than to take the lead in the introduction of a new order of things.

—*Nicolo Machiavelli*
The Prince

Contents

Page

Background and Scope of the Study 3
Summary 5
  Increased Competition: Proposals and Concepts 5
  Effects of Increased Competition on the Use and Innovation of Medical Technology . 7
  Effects of Increased Competition on the Quality of Care 9
  Consumer Information Under Increased Competition 11
Implications for Policy 12
Organization of the Study 13

1.

Introduction and Summary

Arrangements for financing medical care have been cited as an underlying cause of rising expenditures for medical technologies and their indiscriminate diffusion and use. Most providers of medical care, like the providers of other services, profit from greater use. The notable difference with medical care is that the people who buy and use medical technology—mainly physicians, consumers, and hospitals—are largely insulated from the direct costs associated with their decisions. Over the past decade, a number of strategies have been suggested to increase the cost consciousness of people who use medical technologies. These strategies to increase competition and their implications for medical technology form the basis of this report.

Much confusion has surrounded the use of the term competition. **The hallmark of strategies to promote competition is the intention to increase cost consciousness,** and that is how the term is used in this report. Competition also conveys a sense of relying on individuals in the marketplace to decide which technologies to use and how much they are worth, instead of relying on the centralized decisionmaking of regulation. Indeed, the goal of increasing cost sensitivity is to make these individual decisions reflect more fully actual costs and benefits.

Strategies to increase competition would not entail the elimination of regulation. The call for greater competition is relative to the present situation as the starting point. Increased competition would also mark a departure from the regulatory emphasis of public policy during the past decade. More importantly, regulation in a situation with increased cost consciousness would have a different role. Regulation would not substitute for individual decisions about the price to pay for medical technologies or the circumstances of their use. Instead, regulation would be used to establish and support a context in which the buyers and users of medical technologies were more price sensitive, and these individuals would make the decisions about use. In addition, **many of the social problems that prompted governmental regulation in the past would continue.** Examples of such problems are the adequate use of certain technologies to maintain public health, the quality of care delivered, the evaluation of medical technologies, and the accessibility of medical care to poor and elderly people.

In an analysis of proposals to increase people's sensitivity to costs, an important element is the unusual nature of medical care. A strong sense of compassion and concern for people who are sick and suffering pervades the practice of medicine. The standards of medical professionals emphasize these human values and motivate the way they care for patients. Perhaps related is the special way that society as a whole has viewed medical care. As expressed in governmental programs, there is a social concern that people be able to obtain at least minimum levels of medical care, regardless of their ability to pay.

BACKGROUND AND SCOPE OF THE STUDY

This report responds to requests by the House Committee on Energy and Commerce and the Senate Committee on Labor and Human Resources. To aid their consideration of legislation that had been proposed, these committees requested that OTA expand sections of its report *Strategies for Medical Technology Assessment* (208) to consider separately the implications for medical technology of increased competition in health care.

The indiscriminate use and rising cost of medical technology have figured prominently in discussions of problems that characterize the financing and delivery of medical care. But the development and use of medical technology have also been prominent features of modern medical care in the United States. Thus, it is important to examine the positive and negative implications for medical technology of proposals to restructure the financial incentives of the medical marketplace.

Proposals to increase competition in medical care fall into three main categories: 1) increased cost sharing by patients when they use medical care, 2) greater competition among comprehensive care organizations that provide health insurance and deliver medical care, and 3) increased antitrust activities by Government. **This study focuses on proposals for increased cost sharing by patients and greater competition among plans. It excludes the antitrust approach.** However, antitrust activities to promote competition have major importance for price competition among medical providers and for governmental policies. Such activities merit continuing and separate policy research.

This study does not consider the problems that might arise in the process of implementing competitive proposals. It does examine the provisions of the competitive proposals and their likely effects, but does not explore the feasibility of putting the provisions into practice. Furthermore, this study does not consider the possible alternatives to competition. Although past regulatory approaches form the historical backdrop for the development of some of the competitive proposals, they are not considered in any detail. Both of these topics, and particularly the implementation phase, deserve close attention.

In considering the implications of competitive proposals, the study has used OTA's broad definition of medical technology: the drugs, devices, medical and surgical procedures used in medical care, and the organizational and supportive systems within which such care is provided. This definition includes the clinical technologies used for direct patient care, the ancillary technologies used directly to support clinical services, and the managerial technologies not directly associated with patient care but used to support the provision of medical care. In each of these areas, this concept of medical technology covers both tangible and procedural technologies.

The study considers the financing and delivery of medical technologies, but not their development or manufacture. Although the different incentives under increased competition may affect research, development, manufacturing, and marketing of technologies, those stages are not specifically addressed here. It is possible that less growth in medical care expenditures will reduce the profit rate of manufacturers and in turn lead them to reduce their funding for research and development (R&D). If this occurs, R&D activities might be cut back and the level of innovation could fall. On the other hand, the greater cost consciousness of buyers and users of medical technologies might channel R&D as well as innovation into different directions. Development of cost-decreasing and managerial technologies as well as less costly versions of existing clinical and ancillary ones might be stimulated, with no overall drop in the level of new technologies. Greater cost sharing and catastrophic coverage might even stimulate the development of expensive technologies.

This report is related to medical technology and does not address all of the virtues, strengths, or weaknesses of proposals to increase competition. How greater competition would affect insurance coverage and medical expenditures of high-risk people warrants particular attention. With greater patient cost sharing, chronically ill and elderly people might face not only higher insurance premiums but also sizable expenditures that recur every year. With more competition among comprehensive health care organizations, plans might design their benefit packages or market their policies in ways that discourage high-risk people from enrolling. Such social implications of increased competition warrant additional evaluation.

SUMMARY

Increased Competition: Proposals and Concepts

Proposals To Increase Competition

Proponents of greater price competition in medical care share the view that present insurance coverage and the resulting financial and organizational arrangements are the main source of rising medical expenditures and inappropriate technology use. Furthermore, the procompetitive proposals discussed in this study share the intention of strengthening the cost consciousness of the physicians, consumers, and hospitals that make decisions about buying and using technologies. In the present medical marketplace, there is little of the opposition and negotiation between buyer and seller that is characteristic of most purchase decisions. In most marketplaces, buyers are mindful of other purchases that they would be foregoing, and thus usually weigh whether the benefits are worth the costs. With greater sensitivity to price under proposals to increase competition, buyers and users of medical technologies are also expected to weigh alternatives and choose technologies whose costs are more commensurate with their benefits.

Although proposals to increase competition have many similarities with respect to their goals and the mechanisms for achieving them, they have a decided difference in emphasis. **The strategy to increase cost sharing when people use medical care relies on the cost consciousness of individual patients to deter their initiation of care and to temper their use of technologies as well as use generated by providers.** Like consumers of other services, patients would convey their preferences and their cost concerns by their decisions to seek or continue care or not to do so, their choice of providers, and their choice of technologies. Medical providers, like other sellers, would continue to gain more revenue (and incur more cost) from the greater use of their services. But the desire of providers to promote use and expenditures would be opposed by consumers' reluctance to pay the cost from their own incomes.

The alternative strategy, to increase competition among comprehensive care organizations, would place the cost-consciousness choice of consumers only at the point when they choose insurance coverage or plans. At that time, consumers would weigh the premium and out-of-pocket costs with the benefits of enrolling in alternative plans. In this strategy, there would be less cost sharing and less emphasis on deterring the initiation of care. Instead, the organizations that deliver medical care would have the primary role in controlling technology use. These organizations are expected to behave like present prepaid group practices, which receive revenue in advance by capitation (per capita) payments from their enrollees and operate within a prospective budget. Pressured to compete for enrollees on the basis of premium costs as well as quality of care and style of practice, these organizations would match resources to the enrolled population and control the use of technologies, such as hospitalization.

For both sets of proposals, a change in taxation policy is the main vehicle to bring about greater price sensitivity. In the past, tax treatment of health insurance premiums has encouraged coverage, because the expense has been deductible from the income tax of employers or individuals. These deductions have led people to have more insurance than they would if they bore a larger portion of the cost of it, although how much more is not clear. Insurance coverage, in turn, has dulled the sensitivity of patients, physicians, and hospitals to the cost implications of buying and using medical technologies.

Procompetitive proponents unanimously support making taxation more neutral toward medical insurance coverage. The strategy of greater competition among comprehensive care organizations also calls for having a multiple choice of plans.

Although the choices people would make in the context of greater competition are unknown, certain tendencies are likely. Under the provisions suggested for greater cost sharing—greater cost sharing or total direct payment by patients up to a catastrophic limit, coverage of comprehensive benefits, and experience rating of premiums—insurance coverage would have higher levels of cost sharing at the time of use. The extent to which people would purchase supplementary insurance to cover possible expenses below the catastrophic limit is not known: those at greater risk of having medical expenses, such as elderly people and people who have recurrent expenses for chronic conditions, as well as those who generally wish to avoid risks, would be more likely to elect supplementary coverage. Overall, it is likely that the average level of copayment would increase.

Under the strategy of greater organizational competition—multiple choice of plans, community rating of premiums, and a governmental role in enrollment—membership primarily in prepaid group practices and secondarily in individual practice associations (IPAs) would grow more rapidly. It is uncertain whether or not the competition of these organizations would spur other delivery systems and the overall delivery of care to become more efficient. Also unclear are the extent to which physicians would join organized systems and the extent to which newly developed organizations would resemble present ones.

Highlights of Provisions Common to the Proposals

Besides changes in taxation policy, both strategies to increase competition in health care have in common three provisions: 1) minimum benefits defined to cover comprehensive care, 2) full coverage of medical expenses above a catastrophic limit, and 3) payments for premiums or cost sharing related to income. These provisions conform to the economic rationale behind the proposals and are also designed to be compatible with certain accepted social principles.

Comprehensive coverage avoids artificially encouraging the use of one kind of technology over another and permits the choice to depend on their relative costs and benefits. Procompetitive proposals have included in the minimum benefits to be covered by all plans a broad range of services: physician, hospital, and ancillary. The list may also include preventive technologies, drugs, visual and auditory services, mental health benefits, and long-term care. The areas to be covered have not been defined exactly, as befits conceptual proposals that are not intended to be fully operationalized plans.

The definition of comprehensive care is a matter of great significance. Within the new context, the delivery of medical care would be channeled in the direction of the technologies included as standard benefits and away from those that were excluded. Technologies that fell outside the boundary could be slighted, because their use would not be paid for under the cost-sharing strategy and would not be provided by comprehensive care organizations unless people added supplementary coverage. The benefits to be included in comprehensive care would, in effect, set out the scope of technologies considered an essential part of the medical profession. An example is long-term care. Inclusion of long-term care in standard benefits could give people greater financial protection and could reduce the cost and length of stay in acute-care hospitals. Some of the large prepaid group practices cover long-term care and have added their own facilities. However, coverage of long-term care could involve substantially increased expenditures.

The second provision, full coverage of catastrophic expenses conforms to the basic purpose of medical insurance—to protect people from extreme financial hardship because of medical expenses connected with accident or illness. This provision also conforms to the concept that the entire society should help individuals in special need. In any endeavor, however, resources tend to be channeled into the areas that are the least constrained. Expensive and lengthy medical care is already such an area. Under increased cost sharing, this tendency would be further strengthened, because the greater cost constraints on care below the catastrophic limit would make care above the limit a more attractive outlet for technology adoption and use. The overall effect on technology cost, however, is unclear. With greater patient cost sharing for expenses below the catastrophic limit, fewer medical cases might reach the catastrophic threshold. In the case of comprehensive care organizations, the organization would have a financial incentive to control technology use, especially in the more expensive catastrophic range.

Social concerns also underlie the provision that payments be related to income and that they be subsidized for poor people. There is general agreement throughout the society that income should not prevent people from having access to medical care that is considered basic. Although proposals to increase competition seek to instill greater cost consciousness into medical decisions, they also recognize that this approach has limited applicability for low-income groups and cannot be used for poor people. Provisions to subsidize premiums or payments for poor people and to cushion the effects of cost sharing on low-income people would assure them financial access to basic care.

Effects of Increased Competition on the Use and Innovation of Medical Technology

Greater Patient Cost Sharing

Greater patient cost sharing at the time of use deters people from seeking care and results in a lower annual percentage of the population's having contact with the medical care system. Under this strategy, **hospital and physician services would be affected more than others,** which are now subject to more exclusions and cost sharing. Fewer people would be willing to pay the additional cost of a physician visit or a hospital admission. This reluctance would lead physicians to use less expensive settings and technologies, such as ambulatory centers or do-not-admit surgery.* In general, greater cost sharing would affect the initiation of care for children less than care for adults.

The use of preventive technologies would not be greatly affected by increased cost sharing because present insurance often excludes them from coverage and because preventive use in the past has not been very responsive to insurance coverage. **An exception is the use of preventive technologies for children in low-income families; such families have exhibited lower rates of use with greater cost sharing.**

In recent years, insurance for dental care has become more common, and employers have increasingly included it in the health insurance coverage provided to workers. With tax changes and greater patient cost sharing, this trend might be arrested and dental coverage might even fall.

At least initially with greater cost sharing, most of the people who sought medical care would receive fewer and less expensive services. Most consumers would prefer medical professionals who had lower charges and used less expensive technologies, if consumers considered the concomitant lower costs worth the differences in quality of care and style of practice. Patients might not comply with physicians' recommendations for additional visits, diagnostic tests, or therapeutic procedures, especially if the conditions were a minor inconvenience and not life threatening. Patients' reluctance to pay additional costs could also lead physicians to recommend less frequently tests or procedures that have little diagnostic, therapeutic, or preventive benefit.

Physicians, because of the effects on their own incomes, would be more likely to limit technologies provided by outside organizations. Within their own fee-for-service practices, they would be more apt to limit the use of less costly technologies than more expensive ones, particularly if the practice had a substantial investment in equipment or facilities. As with the initiation of care, technology use for children would be less responsive to cost considerations.

The combination of greater cost sharing and catastrophic coverage has been alluded to above. With increasing catastrophic coverage in private insurance and governmental programs to fall back on, people of all ages now have a low risk of paying the large expenses of catastrophic illness. The notable difference from the present would be the complete coverage for high expenses relative to the greater restrictions on payment for less costly care. Because providers would be paid for expenses over the annual limit and patients would have no out-of-pocket payments, technological innovation and use might be channeled in that direction.

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*Do-not-admit surgery is performed in a hospital, but patients are not admitted as inpatients.

People might resist having surgery, hospital admission, or followup care for chronic conditions, but for the cases that exceeded the limit, cost would not be a consideration. Especially for such lengthy or difficult cases, medical training emphasizes technology use, and patients are more inclined to rely on their physicians' advice and to expect technological solutions. The use and price of technology at the upper end of the price spectrum would thus be largely unconstrained, if not encouraged. **The total effect of greater patient cost sharing on technology use and cost is unclear; fewer cases would reach the catastrophic limit, but those that did would be treated more intensively.**

In hospitals, technological innovation and use would be subject to conflicting forces. Greater pressure for efficiency would apply to technologies subject to more cost sharing. If there were fewer hospital admissions, the use of technologies associated with hospital stays would also fall. Again, the presence of preexisting equipment and facilities could retard that development. Pressures to compete for patients on the basis of costs would lead hospitals to trim their operating budgets, to use their equipment and facilities more productively, and to scrutinize more carefully requests to replace or add equipment-embodied technologies and facilities. Hospitals as well as other organizations would adopt at a greater rate cost-decreasing managerial technologies, such as energy management systems. Managerial innovations in hospitals and in organizational arrangements to deliver medical care would be adopted if they were more efficient.

A contradictory influence on hospitals and other organizations with costly cases would come from the lack of restraint on technologies associated with catastrophic expenses. Compared with the present, this situation would channel development, adoption, and use more in the direction of costly halfway technologies* for medical conditions that are lengthy or otherwise subject to expensive care. Again, the net effect on the level of these activities would also depend on the number of medical cases that reached the catastrophic limit.

Whether the net effect on technology adoption and use by hospitals would be greater efficiency or less restraint is unpredictable. Perhaps the technologies associated with low- and high-cost cases would be affected differently. Or hospitals and other organizations might become more specialized in the cases they treat. Some institutions might treat the low- and moderate-cost cases, subject to market pressures to operate efficiently, while other institutions might specialize in more expensive cases, largely free from cost constraints.

An important caveat is that **changes that apply across the entire system might produce results much different from the results of past experiments** that have increased cost sharing for only a limited number of consumers, physicians, and hospitals in an area. Systemwide changes might lower cost and use to an even greater extent. Physicians, hospitals, and other organizations might feel more pressured to be efficient when all of their patients, instead of only a small minority, are subject to substantial cost sharing.

On the other hand, in an era when the number of physicians will undergo a sizable increase, slowing the rate of growth in medical expenditures implies less income for physicians. Hospitals would also be faced with a decline in revenues. Physicians might try to resist by raising their fees, emphasizing more expensive services, and charging separately for services previously billed together and more cheaply. Hospitals as well as physicians might try to maintain their incomes by expanding the use of technologies in areas that were freely reimbursed, such as catastrophic expenses.

Competition Among Comprehensive Care Organizations

Under this strategy, prepaid group practices primarily and IPAs secondarily would experience more rapid growth in their membership, numbers of physicians, and market share. The development of other organizational arrangements combining the insurance and provision of medical care would also proceed more rapidly. Because these organizations would compete for enrollees, they would be under market pressure to produce and use technologies efficiently (lowest cost for a given level of quality).

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*Halfway technologies alleviate the effects of certain diseases or postpone death but do not prevent disease or reflect an understanding of it and are usually expensive.

In the present context, prepaid group practices have been subject to financial pressure because they receive revenue predominantly by capitation payment. Although prepaid groups have delivered medical care to their members at a lower total cost than fee-for-service solo practices, there is insufficient evidence that IPAs or any of the other alternative delivery systems have done so. Questions have also been raised, but not resolved, about whether people who have enrolled in prepaid groups are representative of the population or are less likely to use medical care by preference or because of health status. These caveats should be borne in mind during the following discussion, which describes the changes likely in the present situation if organizations that felt similar pressures for cost control either predominated or exerted sufficient pressure on the others.

With the lower cost sharing for ambulatory care that is typical of present prepaid groups, cost would not greatly deter people from initiating care. People in a context of greater competition among comprehensive plans would have a greater likelihood of having some annual contact with the medical care system than people in a context of greater patient cost sharing. Those covered under Medicaid would be at least as likely to initiate care as they are now.

With competing comprehensive care organizations, once people entered the medical care system, **the organization would have predominant control over the number and kind of technologies used.** In ambulatory care, the organization would have a financial interest in discouraging laboratory and radiological tests that give unnecessary or redundant results and in advising clinicians about the appropriateness and timing of tests and drugs. The presence of equipment would slow these trends. There would be fewer followup visits for many medical conditions, but greater use of the ambulatory setting for cases previously admitted to hospitals.

Ambulatory visits with doubtful cost effectiveness, such as annual physical examinations, might be reduced. **Comprehensive care organizations would not necessarily provide more immunizations or counseling** about chronic conditions, nutrition, or lifestyle. Organizations could promote these technologies if consumers expressed strong preferences for them or if they saved costs for the organization over time. Overall, the per capita rate of ambulatory visits would be the same or lower.

Hospitalization rates, especially for surgery, would fall for all age groups and income levels. As equipment and facilities were not replaced, the adoption and use of technologies associated with hospitalization would fall correspondingly. In both ambulatory and hospital settings, pressures for greater efficiency would promote the adoption and use of cost-decreasing managerial technologies. **Changes would be expected in the innovation and use of managerial technologies** in such areas as staffing patterns, the delivery of ambulatory care, and alternative delivery systems.

Comprehensive care organizations would control technology use for catastrophic care as prepaid groups do now, by their acquisition of equipment, staff, and facilities and by their arrangements with other organizations for rarely used technologies, such as open-heart surgery. Clinicians would continue to make decisions about technology use for individual patients. It is unlikely that catastrophic care would constitute a larger share of total medical expenditures. If market pressure pushed providers to be more efficient about their early treatment of medical problems, and if comprehensive coverage permitted the use of the most efficient settings and technologies, it is possible that catastrophic care would account for a smaller portion of total medical expenses.

Effects of Increased Competition on the Quality of Care

Greater Patient Cost Sharing

Although higher levels of cost sharing can be expected to lead to lower use of technologies—especially in such areas as laboratory tests and drugs, illnesses of a potentially minor nature, and certain kinds of surgery—it is not clear that these changes would decrease the quality of care. For many technologies, there is a tenuous relationship between use and benefit to patients' health. Great variations in rates of use among populations and regions in the past support this skepticism. To the extent that the use of these technologies conveys little or no benefit, greater cost sharing would not appreciably alter the outcome or the length of a patient's condition. Quality could even be improved to the extent that present overuse of technologies with some risk, such as hospitalization and surgery, now harms patients' health without commensurate benefits.

Consumers' use of different kinds of providers could also result in similar levels of quality but at a lower price. For example, less expensive professionals, such as midwives, who were equal in technical aspects and perhaps even superior in interpersonal areas, might be substituted for physicians for some functions. Under such circumstances, levels of quality could either be maintained or improved. Coverage of comprehensive care would be likely to raise levels of quality, as providers and consumers chose the setting and types of technologies for a medical condition without the constraint of limited insurance coverage.

To the extent that people did not initiate care that could significantly alter the course of disease and affect health outcomes, however, quality of care would suffer. For technologies such as childhood immunizations that are cost effective, some harm to quality can be expected with any decline in use. Even with cost sharing related to income, people with low incomes, including many elderly people, would be deterred from initiating care. Another concern with increased levels of cost sharing is that a cost-conscious consumer shopping for less expensive services might unintentionally choose and receive care of lower technical quality, an aspect of medical care that consumers are not able to evaluate fully.

If the coverage of catastrophic expenses for everyone resulted in the use of additional services after large expenditures had already been made, the effect on quality would be indeterminate. The extra care might improve the patient's condition, have little or no net benefit, or produce harm.

Under greater patient cost sharing, the quality concern for technology use by *providers* would be in the direction of overuse, as it is now. With a continuation of present payment methods, providers would continue to have a financial interest in using technologies. Pressure from consumers might lead them to decrease the use of ineffective technologies. But the relatively unrestrained use of expensive technologies for patients with expenses above the catastrophic limit could have the opposite effect. **The concern regarding *consumers* is that they would fail to initiate care in appropriate circumstances,** both for cost-effective preventive technologies and for conditions that could be improved with early medical intervention.

Competition Among Comprehensive Care Organizations

The financial barriers to initiation of care are not stressed under this strategy, and comprehensive coverage in itself would facilitate the initiation of care. However, effective barriers to initiation of care have been achieved by restricted supply of facilities, longer waiting times to obtain an appointment, and travel time to the delivery site. To the extent that access to care is diminished, consumer satisfaction would also be lessened. However, arrangements such as walk-in clinics and emergency rooms, as well as central recordkeeping, might enhance initiation and continuity of care overall, resulting in higher levels of technical quality.

In prepaid group practices, selection of provider is constrained to a preselected and limited staff (closed panel). Although medical professionals guide the selection of providers, the implications for quality are not clear-cut. The most persistent criticism of the prepaid group practice format is that, because the prepaid group practice is a large bureaucratic organization, it tends to depersonalize patients in their dealings with providers and with the medical care system itself.

A consistent finding that relates to quality is that enrollees of prepaid group practices have lower hospitalization rates than people who use fee-for-service solo practitioners. Lowering the rates of hospitalization and of use of the technologies for routine hospital care would reduce patients' exposure to the associated risks, such as infection. Although hospitalization rates among enrollees of prepaid groups appear to be lower across diagnostic categories, there is no indication that patients' well-being has been jeopardized or that technical aspects of the quality of care have been lower. In hospitalization as in ambulatory care, members of prepaid group practices have apparently received medical care of at least comparable quality to that provided by fee-for-service solo practices.

In a restructured situation, organizations competing for enrollees on the basis of price would have an incentive to reduce cost, even at the expense of quality. Present prepaid group practices face loss of enrollment if their membership perceives that quality is below the level that they find acceptable for the cost. Medical providers are also responsive to the external standards of their profession. For both reasons, the practice of medicine in prepaid groups has not differed in major ways from that of other providers. However, the kinds of new organizations that would develop and their response to altered financial incentives could differ from existing prepaid groups. Thus, **the direction of concern about quality with the strategy of greater competition among comprehensive care organizations would be toward underuse of medical care by providers.**

Consumer Information Under Increased Competition

Under increased competition, consumers would need information about the benefits and costs of the decisions that they would be called on to make. **To choose among competing plans that offered comprehensive care, people would require information about total costs—both premiums and out-of-pocket expenses—as well as any quality differences that would affect health. If benefits varied across plans, information about the coverage of each plan would also be needed.**

The information would have to be presented in a standard way to permit comparisons across plans. Although providers might have different styles of practice unrelated to quality, those differences would not be so important to know in advance. The opportunity to change plans during an open enrollment period would permit people to enroll in ones compatible with their preferences. People could learn from their own experience and that of others and gravitate toward the plans they preferred. In theory, all people do not need complete information for a market to function well. A minority of well-informed consumers can influence other consumers and the direction of the market.

As they do now, consumers would face problems in assessing technical standards of quality. For insurance policies with greater cost sharing, the direction of the concern regarding providers would continue to be with overprovision of technologies. With a continuation of retrospective payment methods, providers would have no apparent incentive to recommend too few services. For the strategy of more competing comprehensive care organizations, however, the direction of the concern with providers' use would be with underprovision. Providers operating within a prospective budget could achieve lower short-term costs by recommending too few services.

If comprehensive care organizations had minimal patient cost sharing, as they do now, cost would pose little deterrent to enrollees' initiation of care. And following the initiation of care, the organization would guide the selection of providers and technologies. **Under greater cost sharing, in which cost poses more of a barrier, people would need to be better informed about the appropriate circumstances for seeking care.** Particularly valuable would be information to distinguish self-limiting conditions from those requiring immediate care and to indicate an appropriate preventive schedule.

Society would have an interest in having people, especially children, use effective preventive and therapeutic technologies that can obviate long-term health problems and more costly care. With greater cost sharing, people out of ignorance might choose providers or technologies that were less costly but ineffective or even harmful. The unresolved issues are to what extent better informed consumers can assess incompetent providers or ineffective technologies and to what extent the medical community, other parts of the private sector, or the Government should structure the system or guide consumers' or providers' decisions so that these problems are avoided or minimized.

Although little information is now available and consumers are poorly informed about the costs of their insurance coverage and their medical care, this situation may be reasonable, since consumers are called on to make few choices. In a different context, with greater price competition and more choices, the private sector might generate much of the required information. The providers or plans themselves would be expected to make cost information more generally available. Private groups might arise to develop and publish comparisons, although the difficulty of retaining exclusive control of the information could inhibit its development.

Certain methodological problems would continue to plague comparisons of plans and providers. These problems, which apply to both quality measures and cost indices, could produce misleading results.

The experience with supplementary insurance for Medicare beneficiaries casts doubt on the ability of the private sector to provide adequate information about insurance plans. The backdrop to that situation was the complexity of Medicare coverage itself. Medicare coverage and cost sharing have many variations, and policies to supplement the gaps in coverage have been correspondingly complex. Similar problems are less likely to arise if plans are required to have certain standardized and comprehensive benefits.

IMPLICATIONS FOR POLICY

Either strategy to increase price competition in medical care implies governmental action to establish the framework for the new system. Changing taxation policy to reduce incentives for greater insurance coverage is one example of a provision that would require governmental action. Universal coverage for comprehensive and catastrophic care would require governmental action by regulation, tax incentives, or direct provision of coverage to set minimum levels of benefits to be included. Government is also the appropriate body to establish the mechanisms for relating medical expenditures or premiums for poor people to their incomes.

Under the strategy of greater patient cost sharing, Government could guarantee loans for expenses below the catastrophic threshold, or it could tax supplementary insurance policies to discourage them. Under the strategy of competition among comprehensive care organizations, Government could mandate multiple choice of plans. It could also play a role in the enrollment process, including setting standards and qualifying plans as well as providing information to consumers about the plans.

In the context of increased competition in health care, information for providers and consumers would be intertwined with issues of quality. Quality assessment and assurance would continue to pose problems under either strategy to increase competition, although the direction of concern with providers would differ under each—underprovision of medical care with comprehensive care organizations and overprovision with greater patient cost sharing.

Under the strategy of greater competition among comprehensive care organizations, information requirements for consumers would center on differences in quality (as opposed to style) that accounted for a plan's lower costs. One possible model for developing and providing information is the Federal Employees Health Benefits Program, under which Federal employees choose their insurance plans from among several alternatives. The Government qualifies plans, circulates information to employees about the plans, and enrolls members, and this year also provided each employee with comparisons of the premiums, benefit coverage, and cost-sharing provisions of each plan.

An alternative model is the combination of voluntary Federal certification and State regulation that has been adopted to address problems with supplementary medical insurance for Medicare beneficiaries. Other possible models are the procedures of the Securities and Exchange Commission and the Truth-in-Lending laws. Using these procedures as models, the Government could require that providers generate information about premiums, covered benefits, and likely out-of-pocket expenses and present it in a standardized way to permit comparisons. It could also require information about indicators of quality or practice style.

These models address information needs related to insurance plans' costs and benefits; however, neither addresses information needs related to technology use under greater cost sharing. Present deficiencies in information about the effectiveness of technologies and the competence of providers would persist under both competitive strategies. Under these strategies, medical providers would have more interest in the cost effectiveness of medical technologies, in order to make decisions that considered costs as well as benefits.

It is unlikely that individual delivery systems would be able to generate this information. Possible sources are governmentally funded evaluations conducted in the private or public sector or evaluations from a private consortium sponsored by Government and other interested parties. Under the strategy to increase patient cost sharing, a notable difference from the present situation is the importance of consumer knowledge about initiating care. Since consumers would exercise more discretion about initiating care, they would need to improve their ability to distinguish circumstances that justified their seeking medical care from those that did not.

Under both competitive strategies, the regionalization of specialized facilities may continue to be an issue. Market pressure might make providers unwilling to acquire expensive technologies that were efficacious but used for conditions with a low prevalence. Even large comprehensive care organizations would not have sufficient volume to incorporate all the technologies that their patients would require. Enterprises might develop to provide such technologies on referral from or by contract with other providers. In addition, with greater cost sharing, market pressures for efficiency would not restrain the development, adoption, and use of expensive halfway technologies for conditions whose cost exceeded the annual catastrophic limit. Possible approaches to these problems range from relying on areawide planning at the State and local level to placing certain technologies in medical schools or changing the emphasis and continuing federally supported health planning.

Some technologies, notably primary preventive ones such as immunizations, may not be used to the extent considered socially beneficial under either competitive strategy. Current Federal and State immunization programs could continue to supplement private provision, and similar programs could supplement the use of other technologies as warranted.

Thus, alternative strategies to increase price competition in health care differ in the effects that they are likely to have on medical technologies. Furthermore, the direction of any given effect would vary according to the specific technology being considered. The nature of the problems that are likely to arise and the policies to address them will depend on the strategy and the technology under consideration.

ORGANIZATION OF THE STUDY

Chapter 2 provides background information about the medical care market and the competitive proposals that is needed to analyze their effects on medical technology. The chapter presents the similarities and differences between two kinds of proposals to increase competition: 1) greater cost sharing by patients when they use medical care, and 2) greater competition among health plans and organizations that provide comprehensive care. The concept of competition in medical care is discussed and distinguished from the textbook model.

Subsequent chapters examine the effects of the proposals on three areas that OTA considered of prime importance for medical technology: 1) use and innovation, 2) quality of care, and 3) consumer information. Each of these chapters distinguishes increased cost sharing by patients when they use medical care from greater competition among health plans and organizations. And each also analyzes the likely effects on different decision points: consumers' selection of health plan, patients' initiation of care, and providers' and patients' selection of technologies.

Chapter 3, on the effects of increased competition on the use and innovation of medical technology, considers the likely effects on different technologies: clinical and ancillary technologies, which are used for patient care; and managerial technologies, which determine the resources available and the style of practice. The issues raised in this chapter relate to the efficiency (cost for a given level of quality) of care delivered, as well as the nature of technological advance that would be probable. Chapter 4 examines the likely effects of increased competition on quality of care, an issue related to the use of medical technologies but important enough to receive separate attention. Chapter 5 addresses the different information that consumers would need to make the decisions expected of them under greater competition. This chapter also considers potential sources of information in a situation with different incentives.

Appendixes A and B respectively present the method that OTA used to conduct the study and acknowledge the valuable assistance of the Health Program Advisory Committee. Appendixes C through I contain case studies of governmental programs or regional situations that pertain to issues of use and innovation, quality of care, or consumer information. The material in these case studies is referred to throughout the body of the study.

2.

Increased Competition: Proposals and Concepts

"Would you tell me, please, which way I ought to walk from here?" "That depends a good deal on where you want to go," said the Cat.

—Lewis Carroll
Alice in Wonderland

Contents

Page
Current Incentives Related to the Use of Medical Technology 17
Proposals To Increase Competition 19
  Greater Patient Cost Sharing 20
  Competition Among Comprehensive Care Organizations 22
  Mechanisms To Promote Cost Consciousness 23
The Concept of Competition 24
The Market for Medical Care 26
Effects of Increased Competition: Areas To Be Emphasized 27

List of Tables

Table No. *Page*
1. Participants and Choices To Be Made Under Increased Competition 19
2. Comparison of Proposals To Increase Competition 23

List of Figures

Figure No. *Page*
1. Decision Points Under Proposals for Greater Patient Cost Sharing or Greater Competition Among Comprehensive Health Care Organizations 20

2.

Increased Competition: Proposals and Concepts

In recent decades, spending for health care has been rising much faster than spending for other goods and services in the economy. In 1965, national health expenditures of $42 billion accounted for 6 percent of the gross national product (GNP), but by 1980, they totaled $247 billion or 9 percent of GNP. This growth has been especially notable in the Federal budget, largely because of the entitlement programs for medical care that began in the mid-1960's. In 1965, when Medicare and Medicaid were enacted, personal health care expenditures in the Federal budget were less than $8 billion; in 1980, they amounted to about $63 billion, of which $36 billion was for Medicare and $14 billion for Medicaid (103). Not only are these expenditures straining the Government's budget, but they are also crowding out spending for other programs, such as public health, nutrition, education, and housing.

Strategies to promote competition in health care are responses to the rapid and continuing growth of expenditures for medical care, as well as to the inappropriate use and rising cost of medical technologies. Proponents of greater competition agree in their diagnosis of the problem—lack of cost consciousness by consumers and providers in their decisions about medical care. They also agree that the incentives of present financing arrangements are the underlying cause.

This chapter describes how current medical insurance arrangements stimulate people's use of medical technology without full regard for the cost implications. The next section describes two major strategies intended to promote price competition by increasing cost consciousness. One strategy is to increase patient cost sharing when technologies are used; the other is to use consumer selection among plans as the leverage to pressure comprehensive medical care organizations to deliver medical care more efficiently. A review of the economic theory of competition distinguishes the theoretical model from the strategies proposed. The chapter concludes by examining the competitiveness of the medical care market and the importance of the three areas on which this report will focus as it analyzes the implications of increased competition—use and innovation of medical technology, quality of care, and consumer information.

CURRENT INCENTIVES RELATED TO THE USE OF MEDICAL TECHNOLOGY

There is widespread agreement that present financial incentives have fueled the use and cost of medical technology (79,88,235). The nature of insurance coverage and the financial and organizational arrangements that have flowed from it have dulled the sensitivity of physicians, consumers, and hospitals to cost considerations. The purpose of health insurance is to allow people to obtain needed care without risking financial ruin. But the use of medical technology is subject to much discretion, and insurance has reduced cost as one of the few factors that deter use.

There is also widespread agreement that taxation policy has stimulated the growth of medical insurance (79,88,104). Employers' contributions for their workers' medical insurance and other fringe benefits are deductible as business expenses and are not reportable as personal income to the workers. An extra dollar taken in medical insurance premiums is therefore worth more to a worker than an extra dollar of income that is subject to income tax. Because of these taxation policies, people do not bear the full costs of the insurance coverage they select or that is selected on their behalf by labor unions and employers. This situation encourages people to have more medical insurance than they would buy with after-tax dollars. The deduction from personal income for a portion of health insurance premiums has an effect in the same direction, but is weaker because of the limited amounts permitted.

In 1980, patients paid directly for 32 percent of the total expenditures for their personal health care (103). But the percentage varied greatly with the setting and type of technology. Insurance coverage was most pervasive for hospital expenditures, of which public and private third parties paid more than 90 percent. Third-party payment for other services has been more limited: 63 percent of physician expenditures, 58 percent of nursing home care, 41 percent of other health professionals' services, 25 percent of dental services, 17 percent of drugs, and 15 percent of eyeglasses and appliances (103).

Although coverage for catastrophic expenses grew during the 1970's, at least 15 percent of people with private insurance did not have catastrophic protection (49). Catastrophic coverage limits the insured's direct expenses for covered services to a maximum annual amount, which may vary from $1,000 to $10,000 depending on the policy. In 1978, an estimated 9 percent of all families, mostly those with low incomes, had out-of-pocket medical expenses that exceeded 15 percent of their income (49). The most frequent catastrophic expense has been for long-term care, a type of care used mostly by elderly women (48). The risk of an elderly person's having a catastrophically expensive illness (defined as $5,000 in 1974) was eight times greater than that of a younger person, but an elderly person had the same low likelihood (0.04 percent) of paying out-of-pocket $5,000 or more. Besides private coverage, public insurance programs such as Medicaid and State-supported facilities have expanded to provide financial protection (58).

Insurance not only protects people from the risk of large unforeseen expenditures, but also affects their decisions about using services. Because people with insurance face a lower or even zero price at the time of use, insurance coverage weakens the role of cost as a deterrent to people's decisions to seek care and as an incentive to choose less costly providers or technologies. If greater use by some people causes insurance premiums to rise, they do not feel the full effect, because the cost is distributed beyond the users to all the insured.

Insurance coverage also affects the decisions of physicians, hospitals, and other medical providers. When deciding about the use of medical technologies, providers are less concerned about the effect on their patients' finances if patients are insured. With the deterrent effect of cost muted, the factors that *promote* technology use weigh more heavily in providers' decisions. Medical training emphasizes reliance on sophisticated technologies, and professional norms convey greater prestige to physicians who use such technologies. The society as a whole values technological solutions to problems, in medical care as well as in other fields, and patients often associate sophisticated technologies with quality care (13).

The usual methods of paying providers also contain incentives for them to use additional and more expensive technologies. As is the case with the providers of most services, the providers of medical care gain more revenue the more their services are used. The difference is that consumers with insurance tend not to resist the cost. Most physicians are paid fees for their services, with the relative fees higher for procedures connected with complex diagnostic equipment than for those associated with caring. Hospitals are reimbursed for the costs or charges of their operations. They may compete for physicians by making sophisticated, prestigious technologies available to them, and passing the cost on to third-party payers.

The overall result has been inefficiency (higher cost for a given level of quality) in the provision of particular technologies and in the combination of technologies used for a given medical condition. In the absence of pressures for providers to be efficient, fragmentation in the delivery of care has persisted, with resulting duplication of facilities and technology use. A related phenomenon is the choice of setting for providing certain technologies. Often the more expensive and less safe hospital setting is used when ambulatory care would be just as effective.

Capitation payment alters the incentives of fee-for-service. A practice paid by capitation receives in advance an annual per capita payment for each enrollee and undertakes the responsibility of providing or arranging for covered services. To increase the practice's revenue, therefore, it is necessary to increase the number of enrollees. Providers do not have a financial incentive to use additional or expensive technologies because revenue per enrollee remains fixed regardless of the number of services used. Since use raises expenses but not revenue, the financial incentive is to limit use.

Health maintenance organizations (HMOs) receive payment by capitation and combine the functions of insuring and providing a comprehensive range of medical care. HMOs have two main variations: prepaid group practices and individual practice associations (IPAs). A prepaid group consists of physicians, most of whom practice full time with the group; an administration; and supporting ancillary facilities. Since most of its revenue is fixed in advance, a prepaid group must make decisions about the acquisition and use of technologies within a predetermined budget. Within this budget, physicians and administrators weigh alternatives and choose technologies to buy and use.

Although the umbrella organization of an IPA is paid by capitation, the same incentives do not apply to technology use. In contrast to a prepaid group, physicians in an IPA remain practicing in separate offices and receive fees for the separate services provided to IPA enrollees. Most also have additional and often larger numbers of patients who pay on the usual fee-for-service basis. Thus, these IPA providers do not face the same preset and limited budgets of their prepaid group counterparts. And the incentives of capitation payment to limit technology use are correspondingly weaker.

PROPOSALS TO INCREASE COMPETITION

Proposals to increase competition share the intention of strengthening the extent to which cost enters into the decisions of providers and consumers. Procompetitive proponents concur in a desire that consumer preferences guide the style of medical care that is delivered. They also favor relying more heavily on the marketplace for decisions, with governmental regulation assuming a corrective and supportive role. All advocate that Government continue its support of elderly and poor people and, depending on the proposal, that Government qualify plans and enroll members.

Although the strategy that would increase patient cost sharing and the one that would promote competition among comprehensive care organizations overlap in many of their means and goals, they have a decided difference in emphasis (see table 1, fig. 1). The former favors increasing the direct financial impact on individuals at the point of using medical services. The latter places the critical consumer choice at the time when insurance coverage or plan is selected and would have individual consumers bear more of the cost of that decision. Under this strategy, the organization delivering care would have financial incentives to control technology use.

Table 1.—Participants and Choices To Be Made Under Increased Competition

Government
- Determine tax treatment of insurance premiums by employers, employees
- Determine tax treatment of medical expenditures by consumers
- Whether to guarantee loans to consumers for high expenses
- Whether to subsidize premiums or expenses of aged, poor, general population
- Whether to mandate or support areawide planning
- Determine its role in quality assurance
- Whether to provide information
- Determine its role in consumer enrollment and qualification of insurance plans

Consumers
- Selection of coverage or supplementary coverage
- Decision to seek care
- Type of provider to use
- Type of technology to receive

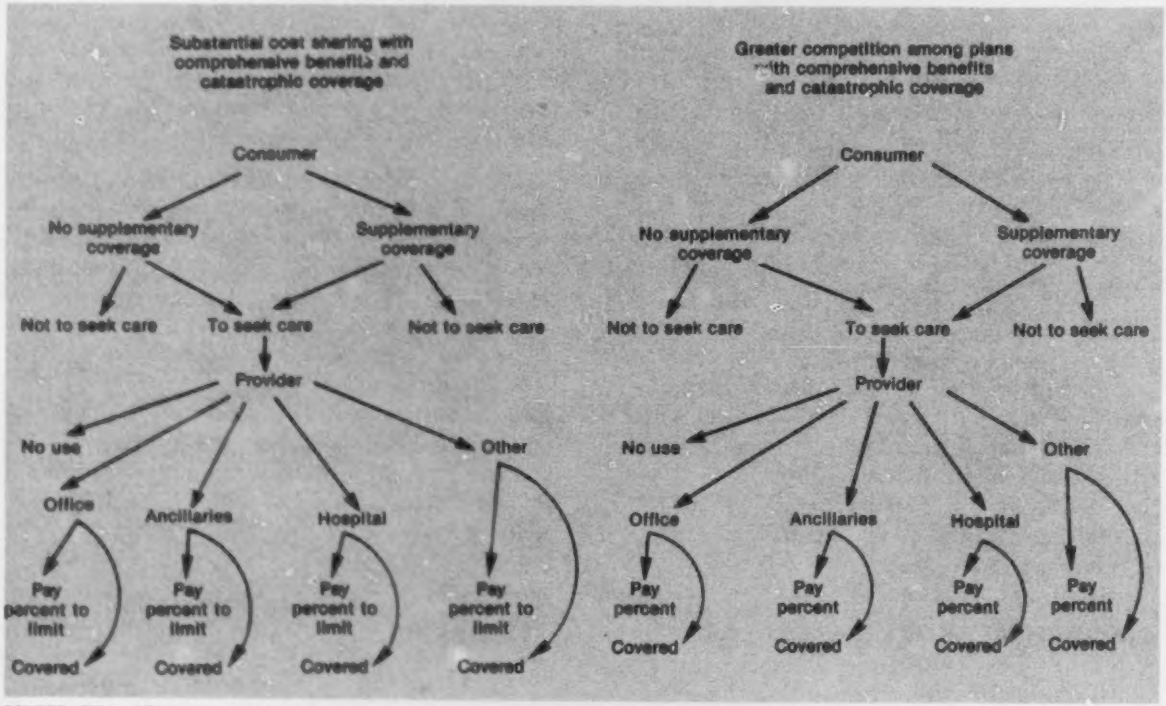
Unions or employers representing consumers
- Develop and screen options available for consumers

Insurers
- Types of coverage to offer
- Marketing strategies
- Relationships with providers

Providers
- Decision to provide care
- Types of services and settings (technologies) to use
- Relationship with insurers
- Relationship with other providers

SOURCE: Office of Technology Assessment.

Figure 1.—Decision Points Under Proposals for Greater Patient Cost Sharing or Greater Competition Among Comprehensive Health Care Organizations


Substantial cost sharing with comprehensive benefits and catastrophic coverage
Consumer
No supplementary coverage
Supplementary coverage
Not to seek care
To seek care
Not to seek care
Provider
No use
Other
Office
Ancillaries
Hospital
Pay percent to limit
Pay percent to limit
Pay percent to limit
Pay percent to limit
Covered
Covered
Covered
Covered
Greater competition among plans with comprehensive benefits and catastrophic coverage
Consumer
No supplementary coverage
Supplementary coverage
Not to seek care
To seek care
Not to seek care
Provider
No use
Other
Office
Ancillaries
Hospital
Pay percent
Pay percent
Pay percent
Pay percent
Covered
Covered
Covered
Covered

SOURCE: Office of Technology Assessment.

Greater Patient Cost Sharing

The proponents of increasing cost sharing when patients use services wish to correct the distortion that now results from insurance coverage (88,213). They characterize the present situation as one in which, "with the exception of some of the poor and the near poor, most people have too much insurance of the wrong kind" (212). Insurance is considered excessive in the sense that the costs are greater than the benefits to the consumer. Although the consumer benefits from reduced risk of facing uncertain medical expenses, the resulting costs of insurance coverage from stimulating use of services and altering the style of care delivered are said to overshadow these benefits.

People make decisions about use that are based on the lower cost they pay out-of-pocket. Since insured people do not bear the actual costs of use, the theory is that they are more apt to initiate medical care and that they weigh cost less heavily in their choice of providers and technologies. The overall results are not considered desirable even from the point of view of the insureds, who may prefer that more resources be channeled into areas other than medical care.

Proponents of greater patient cost sharing would correct this distortion by having the nonpoor pay a substantial portion of their medical expenditures. Feldstein, for example, has proposed "major risk insurance" (88). Insurance would cover comprehensive care, so that coverage would not artificially encourage one setting or type of care. Insurance would also completely cover catastrophic expenses to protect people from financial hardship. Nonpoor families would bear their medical costs up to the catastrophic threshold, a figure such as 10 percent of income that would be "large in comparison to average family spending and health care but low relative to family income" (88).

Feldstein's proposal called for the Federal Government to provide such major risk insurance and to guarantee loans for expenses below the limit. A tax credit for catastrophic coverage (213) or for expenses above a designated percentage of income (242) are alternatives. Such provisions would replace the current income tax deduction for medical expenses over 3 percent of income. Feldstein favored continuation of Medicare, perhaps with increased deductibles. Major risk insurance would eliminate medical indigency by limiting the deductible to 10 percent of income. Families below the poverty line could be given an additional cash grant to cover their expected medical expenses.

Feldstein foresaw a continuing role for areawide planning. Although the market would guide more decisions, planning could coordinate the location of expensive equipment and long-term investment in facilities.

Proponents of increased cost sharing by patients at the time of use contend that this strategy would lead to more efficient use of resources. As patients became more cost conscious about whether or not to use services and shopped on the basis of cost and quality for the provider or the setting of the care that they did seek, providers' behavior would change. Physicians would continue to guide patients, but their advice would reflect concern about the effect on their patients' finances. And hospital administrators would become more conscious of costs in the management of their institutions (88).

How likely are these intended effects to occur? Proponents of greater cost sharing agree on the importance of reducing first-dollar coverage, which they believe stimulates people to use more services. An important issue is whether or not people with insurance coverage against major risks would purchase supplementary coverage for expenses below the limit that are left uncovered. Feldstein believes that people seek insurance mainly to protect against the risk of major expenses, and expects that most people would not seek additional coverage if major risk insurance existed. He predicted that only families expecting above-average medical expenses would seek supplementary coverage, a process of self-selection that would raise premiums and ultimately limit demand for such coverage.

Supplementary coverage induces greater use of the services covered by the basic plan. A person with insurance to supplement Medicare coverage, for example, is more likely to use additional services and to reach the level at which Medicare coverage begins. Since the premium for supplementary insurance does not reflect extra costs to Medicare, Pauly has suggested a tax on supplementary coverage. Such a tax would discourage people from purchasing supplementary coverage or reflect the added cost if the purchase was made (213,215).

There has been no direct test of the kind of insurance coverage that people would select if they had catastrophic coverage and taxation did not distort their choice. Some theoretical work supports the prediction that people would not elect supplementary coverage for ambulatory care if they had inpatient coverage (136). Even with present tax incentives, where employees had options, almost as many chose the least expensive option as chose the most expensive (84). People at greater risk of having medical expenses, such as elderly people and those with recurrent expenses for chronic conditions, and people who generally wish to avoid risks would be more likely to buy supplementary coverage. Although the extent of supplementary coverage and the magnitude of the changes are unclear, the direction of the effect of more neutral taxation would be toward coverage with more cost sharing than is now the case.

Proponents of greater cost sharing believe that the changes they propose have the best chance of moderating medical care use and costs in the near future. However, a major goal of this strategy is to improve the decisionmaking process. It would be perfectly acceptable to them if people still wanted to buy that amount and kind of care when they were paying a larger part of the actual cost at the time of making the decision. "A fundamental premise of competition is that the level of use of a good or service that people demand at a price that reflects cost is the best level of use for them" (215).

Competition Among Comprehensive Care Organizations

A second strategy emphasizes competition among organizations that deliver comprehensive care (79,170). Proponents of this approach observe that organizations such as prepaid group practices provide medical care to their members at lower cost than other practices. But these organizations represent a small share of the market. Despite their growth in the recent years, in 1981 prepaid groups had fewer than 9 million members, which represented slightly under 4 percent of the market nationally (57,61). This strategy seeks to create market conditions so that these and other organizations that deliver comprehensive care can compete on a more equal basis with other plans for members.

Certain aspects of the present market are cited as inhibiting the growth of these comprehensive care organizations: the tax treatment of insurance premiums reduces the influence of cost in consumers' selection of plans and coverage; and prevailing payment methods do not reward cost consciousness, but instead give physicians and hospitals higher revenue for greater and more costly use of technologies. To create a more favorable climate for the growth of comprehensive delivery systems, two main mechanisms are suggested: expanding the number of people who are offered an alternative delivery system and, through tax changes, having people bear more of the costs or savings of their coverage choices. With all plans offering comprehensive care and catastrophic coverage, consumers would choose the combination of style of care, level of premium, and extent of out-of-pocket costs that they preferred.

This strategy would place the critical choice by consumers at the point of insurance coverage rather than use of services. This approach reflects the judgment that, "the sick or worried patient is in a poor position to make an economic analysis of treatment alternatives" (79), and that the appropriate point for rational economic choice is annual selection of a health plan.

Proponents of competition among plans argue that comprehensive care organizations are now providing good quality care at lower cost. If all plans compete for enrollees on an equal basis, they expect that consumers would prefer these comprehensive care organizations. They expect that competition for enrollees would both favor these organizations and pressure other providers to improve their efficiency. Some of the arrangements formed by providers would resemble those now most common—fee-for-service physicians practicing separately from hospitals and other facilities and receiving reimbursement from an insurer.

What is emphasized, however, is the superior performance that has been or might be achieved by comprehensive care organizations, mainly prepaid group practices, but also IPAs, fee-for-service multispecialty groups, primary care networks, health care alliances, and preferred provider organizations (see Glossary of Terms). These alternative delivery systems have in common that the organization that collects the premiums also provides or arranges for comprehensive services. The functions of insuring and delivering comprehensive care are thus integrated in the organization (see ch. 3).

Medicare and Medicaid recipients could enroll in the competing plans. Under Enthoven's Consumer Choice Health Plan, Medicare beneficiaries could have the Government apply their actuarial cost to the premium of the qualified plan they select (79). The Government would also provide poor people with a voucher related to family income that could be used for the premium of a qualified plan.

Enthoven stipulated that the Government should qualify plans and supervise the enrollment process through a set of rules that apply to all plans. Both Enthoven and McClure would have the plans provide information about premiums, out-of-pocket costs, and benefits covered. This provision seeks to aid consumers' comparison and choice of plans (79,170).

Some of Enthoven's requirements for qualified plans are intended to channel competition away from nonprice aspects and into efforts to reduce costs. Requirements include annual open enrollment, community rating, coverage of certain minimum services, premium rating by market area, catastrophic coverage, and information disclosure. Coverage of comprehensive care as minimum benefits and enrollment restrictions address the problem of "free riders," who might buy no insurance until they expect medical expenses. Community rating—uniform premiums within actuarial categories—reflects a belief that the well should help pay for the care of the sick. It also relates to the potential problem of adverse selection, whereby high or low users of services gravitate to certain plans, as described below.

Proponents of greater plan competition emphasize the importance of creating incentives for providers—medical professionals and organizations—to perform efficiently. They point to the largely untapped potential to use medical technologies more judiciously and to hospitalize less frequently. This strategy would rely on alternative delivery systems to rationalize technology use and to achieve lower medical expenditures.

Mechanisms To Promote Cost Consciousness

Both strategies to promote competition advocate changes in taxation so that it has a more neutral effect on health insurance coverage (see table 2). The Enthoven-McClure-Ellwood approach also calls for giving workers a multiple choice of plans (79,170). Although consumers themselves might press for such a choice, mandating it would certainly hasten the process. The intended result of the changes is to instill more sensitivity to price in selection of plans and coverage.

Both strategies would also have insurance cover comprehensive care. Comprehensive coverage avoids encouraging one kind of technology, such as hospitalization or surgery, over another, such as ambulatory or medical therapy. It also permits the combination and location of technologies used to be more responsive to actual relative costs.

Both sets of proposals to increase competition would cover catastrophic expenses and relate payments to income. These provisions are based on social values. Both are intended to prevent financial hardship because of poor health and to prevent income level from unduly limiting the use of medical services.

Table 2.—Comparison of Proposals To Increase Competition

Similarities among proposals

- Taxation more neutral toward medical insurance coverage
- Comprehensive benefits standard
- Catastrophic coverage standard
- Supplementary coverage an available option
- Government subsidies for the poor
- Income-related payments (for insurance premiums or cost sharing)

Differences among proposals

Provision	Greater patient cost sharing at the time of use	Competition among comprehensive health care organizations
Amount of cost sharing	Emphasized—applied to all services up to annual limit	Deemphasized—possibly as low rates, perhaps for ambulatory care
Multiple choice of plans	Permissible	Emphasized
Basis of premium rating	Experience rating	Community rating
Areawide planning	Yes	Not included
Government role in enrollment	Perhaps provide minimum coverage to everyone	Qualify plans Provide information about plans Enroll members

SOURCE: Office of Technology Assessment.

Other provisions of the two strategies differ. The most notable difference is the degree to which they emphasize patient cost sharing. The mainstay of the one strategy is a provision for substantial cost sharing to deter people from seeking care and to pressure providers to practice efficiently. The other strategy would permit cost sharing for ambulatory services up to about 25 percent coinsurance rates (79). However, proponents of this strategy consider cost sharing neither philosophically nor practically appropriate to curb use when people are very sick and would rely instead on the organization that delivers care to rationalize use.

Although all proposals would cover comprehensive care, they leave room for supplementary benefits for the number or kind of services covered. Possibilities include mental health, dental, visual, and long-term care.

Another difference is the basis of premium rating, experience or community rating. This issue has implications for the kinds of people who will select different plans and the likely reactions of insurers. If the *insurers* can distinguish high and low risks or high and low users of care, and if they may charge people different premium rates, the insurers will charge higher rates to people likely to incur higher costs and lower rates to the better risks (risk rating). Theoretically, insurers will sell insurance to high-risk people if the premium can be set high enough to make it profitable to cover the expected loss. In fact, there are people who cannot obtain medical insurance, but little is known about their specific circumstances and the influence of high premiums or high risk (215).

Adverse selection concerns the behavior of *consumers* and occurs if consumers know more about their risk status than insurers do (215). Although that is the technical meaning of adverse selection, the term has been used to describe situations in which people likely to be high users choose plans with more extensive benefits and low risks choose plans with less extensive benefits (104). If premium rates are based on the experience of the enrollees, adverse selection and the differential use that follows will raise the premiums of the plans with more benefits and lower those of the plans with fewer benefits.

Community rating with uniform premiums and open enrollment would have the well help to support (cross-subsidize) the chronically ill and would reduce "free riders" (people who buy no insurance until they expect medical expenses). Not being able to charge higher premiums for higher risks would give plans an incentive to target their marketing or supplemental benefits to lower risk people and to try to avoid the higher risks. Enthoven has suggested administrative procedures, such as limiting the high-risk people that a plan would have to enroll, to deal with these potential problem areas (79).

The main controversy about premium rating revolves around the extent and method by which medical care for high-risk people should be subsidized. Although this report does not consider further the issue of adverse selection or cross-subsidization, there are alternative mechanisms within either experience or community rating that should be considered before implementation.

THE CONCEPT OF COMPETITION

Proponents of increased competition in health care have used the term competition to mean greater regard for price in medical care decisions. Their use of the term also conveys a sense of relying on individuals in the marketplace instead of Government regulation for basic decisions. Indeed, the intention behind increasing people's cost consciousness is to have the market allocate resources efficiently on the basis of price.

The colloquial use of the term competition connotes a contest among rivals: the effort of two or more parties acting independently to secure the business of a third party by offering the most favorable terms (274). However, since competition is an economic term and many of the proponents of the competitive proposals are economists, it is appropriate to consider the meaning of the term in economic theory, and to distinguish the concept of competition from the model of perfect competition in economic theory.

A model, such as pure or perfect competition, is by nature a simplified statement that may depart from reality, and economists readily acknowledge that perfect competition does not pertain in the markets for the vast majority of goods and services, including medical care. Why, then, is so much attention paid to the existence of competition? One reason is that under the theoretical conditions of pure or perfect competition, an equilibrium position results in the most efficient allocation of resources. There is no other allocation that would make everyone better off (such a situation is termed Pareto optimum). With some monopolistic power, a seller can raise its price without losing all its customers; it has some control over the price it receives. Compared with pure competition, with the presence of some monopolistic power, price is higher, quantity produced is lower, and welfare can be improved by producing a greater quantity at a lower price. Competitive conditions are thus used as a standard of comparison for actual market conditions.

Another appeal of competition is the idea that people separately pursuing their own self-interest will achieve a situation that is best for everyone. This concept resembles the idea of the "invisible hand" attributed to Adam Smith. Like Smith's ideas, this one presupposes that governmental regulation will create a favorable context and will remedy major problems that arise.

Economics textbooks state certain assumptions about conditions that are necessary for pure competition. The key condition is a large number of buyers and sellers, so that each is small relative to the market and is unable to influence the market price. A related condition is that consumers consider the products that are being traded to be identical or "homogeneous." Under these conditions a seller would lose all its customers if it independently raised its price; no one would pay a higher price for the same product. By contrast, sellers with differentiated products and monopolistic power have some control over the price and quantity of the products they sell because customers might be willing to pay a higher price for the product they prefer to a slightly different one.

The condition that there be no barriers to producers' entering or leaving the market ensures that no seller or group of sellers will be able to wield monopolistic power over time. A supporting condition is that the materials and workers needed to make the product can move freely from one industry to another. For perfect competition, the additional assumption is necessary that buyers and sellers have perfect knowledge about market conditions. This condition enables them to reach an equilibrium price (the price that equates the amount buyers wish to buy with the amount sellers wish to sell) without repeated trial and error.

Other assumptions underlie general economic theory and its theory of competition. The doctrine of consumer sovereignty asserts the central importance of individuals' preferences. Also related to consumers are the assumptions that they have limited incomes from which to make decisions about purchases and that they freely choose what to buy. On the production side, each product is produced as cheaply as possible (technical efficiency), and the prices of materials and workers are not subsidized but reflect their actual costs. It is also assumed that demand and supply are independent.

The theory of competition just cited relates only to the efficient allocation of resources and has not considered the distribution of income or other issues of equity. A position of maximum efficiency does not necessarily entail the best level of social welfare, and may or may not be judged acceptable by political or ethical standards. This caveat applies particularly to medical care, since social values have supported reducing inequality of access to medical care by the poor (97).

Moreover, if some important sectors of the economy are monopolistic, as is the case in the United States, establishing conditions more in conformance with competition in one sector will not necessarily improve the overall allocation of resources, and may worsen it. According to this "Theory of the Second Best," the conditions to promote efficiency then depend on the particular circumstances involved; there is no general set of conditions that apply (150).

This discussion of competition has thus come full circle to the question of whether or not the promotion of competitive conditions is desirable. A policy in favor of relying on competitive markets to allocate resources has been supported on grounds other than efficiency. One reason given is the relative superiority of markets over political or other administrative methods to coordinate economic activity and avoid surpluses or shortages of goods at prevailing prices (10). There is also a philosophical argument against concentration of power either in monopoly or in Government and in favor of allocation by the atomistic and impersonal operation of the market (237).

Several main points flow from this discussion of the economics of competition. One point is that the term competition has often been used to connote reliance on the market to allocate resources rather than to signify the absence of monopolistic influences; and the alternative to the market has been considered the centralized direction of resources by governmental regulation. Another point is that promoting competitive conditions will not necessarily achieve the most efficient allocation of resources and that efficiency is only one of several bases by which to evaluate the performance of a sector of the economy. The following criteria have been identified to assess the social desirability of market performance and to constitute a concept of workable competition (12,237):

- *Efficiency.*—Each product is produced and sold as cheaply as possible (technical efficiency), and allocation of resources among different products is most efficient (allocative efficiency).
- *Progress.*—Sellers develop and introduce new products and techniques so that consumers have better products and so that production costs decrease.
- *Quality.*—The quality of products, including kind and variety, is responsive and accessible to consumer preferences and societal needs.
- *Equity.*—The distribution of income is considered equitable.
- *Full employment.*—Resources, especially labor, are fully employed, or at least the specific market does not impede that overall goal for the economy.
- *Price stability.*—There is agreement about the desirability of the concept, but its definition in a complex economy is unclear (246).

THE MARKET FOR MEDICAL CARE

The current market for medical care obviously does not conform to the theoretical conditions of perfect competition or to the criteria of socially desirable performance. In some cases, the very nature of medical care precludes those conditions. It has been said that competition is workable if there is no clearly indicated change possible through public policy that would achieve greater social gains than social losses (166). The following review of the way medical care diverges from the model indicates that there is much room for improving the present situation and puts into perspective the emphasis on financing arrangements.

The most important cause of the divergence from attainable conditions is the fact that medical insurance has undermined the usual economic assumptions about consumers. As described earlier, consumers often do not bear the cost of using medical services, especially expenditures for hospital services. Insurers, who are uncertain of people's risk status and unable to identify it in any straightforward way, cannot easily separate out the additional and discretionary use that people have because of insurance coverage.

Inefficiencies in the production and delivery of medical care result from the effect of these financial incentives on providers. Individual services are not produced or delivered in the most efficient manner, as described earlier, and the combination of technologies used for a given medical condition is often not the least costly for the medical benefit gained. Nor do the prices of services reflect their true costs. The prices of some technologies, such as radiological services, are often set higher than costs and the excess used to subsidize other services, such as hospital room and board or outpatient care.

There are clearly restrictions on entering the field of medical care delivery. They have been at least partly motivated by the desire to protect people from incompetent providers and to maintain minimum standards of quality. Compulsory licensure of physicians and other health professionals is the most obvious restriction. In addition, hospitals limit the physicians to whom they confer admitting privileges. Certificate-of-need requirements may pose barriers to entry for facilities such as kidney dialysis centers or acute-care hospitals and to new organizations that wish to begin operating in an area. Legal prohibitions on physicians' practicing as employees of an organization and on the corporate delivery of care have been used to prevent formation of prepaid group practices in some areas. As discussed in chapter 1, these issues are important but are not analyzed in depth in this report.

For some kinds of medical technologies, the benefits gained by society are greater than the benefits gained by the individuals who use the care. These "externalities" apply especially to the prevention and treatment of infectious diseases. If there are such externalities, individuals' pursuit of their self-interest may not lead to the most efficient allocation of resources. Individuals making decisions about vaccinations, for example, will not have vaccination rates that are as high as is socially optimal because they take only their own benefits into account. Governmental programs have historically promoted such technologies through education, subsidies, or regulation. Examples are public health programs to immunize young children and to conduct eye examinations in schools.

Buyers or sellers are often large enough in the market to influence the price that they pay or receive. Union members or employment groups may bargain as a unit with medical care providers, and most hospitals are in urban areas where a few large hospitals have the vast majority of the beds (235). Rural areas or small cities may not be large enough to support numerous hospitals or specialized facilities and still take advantage of the efficiencies from potential economies of scale (97, 172). The equity and quality of having specialized medical technologies accessible, as well as the cost of transporting people elsewhere, may result in a small number of specialized facilities in such areas.

The services of different hospitals, physicians, or other providers are not identical. Physicians of the same specialty differ in their style of practice, and manufacturers of medical supplies try to draw customers by distinguishing their products from others. This situation, in which there are many buyers and sellers of slightly different services (monopolistic competition), may have little practical effect on the price and quantity of services (10). In medical care, people have the advantage of many options, as well as the associated difficulty of comparing prices and qualities to make purchase decisions.

The desirability of consumer sovereignty in medical care has been questioned. The issues are both technical and philosophical: whether or not people are capable with supplementary information of evaluating medical alternatives, and whether or not people's preferences should predominate (116,190). Physicians may compensate for consumers' lack of knowledge by acting as their agents in making medical decisions (7). But the possibility has also been raised that physicians go beyond an agent's role to generate demand for their own services, a concept that conflicts with the assumed independence of demand and supply. The results of research on this issue have been contradictory (14,215,279), as one would expect of a phenomenon that is difficult to identify and measure.

EFFECTS OF INCREASED COMPETITION: AREAS TO BE EMPHASIZED

The review in this chapter suggests certain areas regarding medical technology that merit particular attention when evaluating the changes that would be likely under increased price competition: 1) the effects on the use and innovation of medical technology, 2) the effects on the quality of care delivered, and 3) the needs of consumers for information. These areas relate to existing problems that have been identified and to certain criteria that have been suggested to evaluate the performance of a market. The criteria of efficiency, progress, and quality figure prominently in each of these areas. Subsequent chapters consider issues of equity, the fair distribution of medical benefits, and costs in each of these subject areas. Full employment and price stability as aspects of the general economy are not examined separately in this study of the medical care sector. Price stability in particular would be promoted by greater efficiency in medical care delivery and moderation in rising medical expenditures.

The inappropriate use of medical technology has been a longstanding concern of public and private policymakers alike. Both the underuse of cost-effective technologies, such as certain preventive technologies, and the overuse of technologies that confer little or no benefit relative to their costs, such as repeated enzyme tests for cardiac patients, have been cited as factors behind rising medical expenditures. In fact, one of the motivations of proposals to increase competition is to improve technology use by changing the financial incentives that act on consumers, physicians, and hospitals.

The term appropriate use conveys consideration of the medical benefits as well as the costs of a technology relative to other technologies that might be used for a medical condition and relative to other uses of those resources. This concept has the same elements as that of efficiency, the attainment of a given level of quality for the least costly use of resources. Evaluating changes in the use of medical technology that are likely to result from greater competition thus relates to efficiency, one of the standards proposed to assess the performance of a market.

Innovation or progress is another factor that is highly valued by American society and is used to evaluate market performance. The introduction of new technologies has been a hallmark of medicine in recent decades. Proponents of greater price competition hope to improve the medical technologies that are developed by strengthening the attention that is paid to cost. Whether more price competition will hinder innovation or channel it into more productive areas is an important subject of inquiry.

A basic purpose of the medical care system is the delivery of care of good quality, a factor that is used to evaluate markets generally. The most pervasive policy concern in the present context is the excessive use of technologies, primarily because of rising medical expenditures. There is also an underlying social concern that people be given access to medical technologies that can remedy or improve their health problems. Proponents of greater price competition expect quality to improve with changed financial incentives. Since proposed changes are intended to alter technology use, the likely effects of the different proposals on the quality of care delivered deserve particular attention.

Consumers' lack of information or expertise about medical technologies has been cited as a feature distinguishing medical care from most other markets. Proposals to increase competition, however, place greater reliance on consumers to make choices that ultimately would guide the kind and amount of medical technology that is used. The needs of consumers for information in a more price-competitive system and the likely availability of that information have implications for the ability of the medical market to function smoothly under the changes proposed.

3.

Effects of Increased Competition on the Use and Innovation of Medical Technology

> Most decisions involve choosing between a little more or a little less—in other words, comparing the marginal benefit with the marginal cost.
>
> —*Victor R. Fuchs*
> *Who Shall Live?*

Contents

Page
The Diffusion of Technology 31
Research on Technology Use With Greater Patient Cost Sharing 33
Research on Technology Use in Comprehensive Care Organizations 36
  Hospitalization 37
  Surgery 38
  Ambulatory Physician Services 39
  Ancillary Services: Laboratory and Radiology 40
  Preventive Services 40
  Managerial Technologies 41
  Total Expenditures for Medical Care 42
Research on Innovation 43
Likely Effects of Increased Competition on Technology Use and Innovation 45
  Greater Patient Cost Sharing 45
  Competition Among Comprehensive Care Organizations 48
Implications for Policy 50

List of Tables

Table No. *Page*
3. Interim Results of the Rand National Health Insurance Study: Annual per Person Probability of Use With Different Coinsurance Rates 34
4. Estimated Price Elasticity of Demand for Medical Services 35

3.

Effects of Increased Competition on the Use and Innovation of Medical Technology

The use of clinical and ancillary technology requires that a person must decide to seek care and a medical care provider must decide to let that person enter the system as a patient. Not only the fact that use occurs but also the kind of clinical or ancillary technology that is used depends on the combined decisions of consumers, organizations, and individual practitioners. By contrast, organizations and practitioners can determine the use of managerial technology without the involvement or concurrence of consumers.

Through greater cost consciousness of consumers and providers, proponents of increased competition hope to improve technology use. Depending on the proposal, these changes in use are expected to come about from effects at several levels:

- consumers' decisions about whether or not to seek care, and if so, which providers and technologies to use;
- providers' (physicians' and organizations') decisions about whether or not to let a person enter the system as a patient and, if so, which settings and clinical and ancillary technologies to use;
- insurers' and providers' managerial decisions about their own interaction and their control over resources available; and
- innovators' decisions over time about kinds of technologies to develop and introduce.

This chapter first discusses the concept of technology diffusion and the ways that procompetitive proposals wish to change the diffusion process. After a review of empirical studies of greater patient cost sharing and of comprehensive care organizations, the likely effects of the proposals on technology use and innovation are charted. The concluding section considers the implications for policy. Related issues of quality are discussed in chapter 4.

THE DIFFUSION OF TECHNOLOGY

Diffusion is the process by which a technological innovation enters and becomes part of the medical care system. An innovation may represent the introduction of a new technology or the refinement of an old one. The key feature is that an individual perceives it to be new, even though it may have existed for some time (232). The rate of diffusion of a medical technology is usually expressed as the percentage of medical providers, either organizations or individual professionals, who adopt it over time (46).

An often lengthy period of research and development precedes diffusion. Basic theoretical research from such fields as physics, chemistry, biology, and engineering lays the conceptual foundation, and applied research and development draws on that knowledge to solve medical problems. Once the feasibility of a new technology is demonstrated, the transfer of the technology from laboratory to marketplace is begun. A prototype may be built and refined, followed by manufacturing and marketing efforts. The developmental phase may also involve clinical testing on human subjects. During development, problems may be revealed that feed back into further research and modification or that lead to abandonment of the technology (202).

Adoption is related to but not synonymous with use (46). The adoption of equipment-embodied technology, such as computed tomography (CT) scanning, is usually marked as the point when the machine is acquired. But the acquisition of equipment does not ensure its use or predict the extent of its use. A hospital may acquire a CT scanner, but clinicians' decisions determine its use for patients, and radiologists and the radiology department determine how long during the day it is available. Sociologists have theorized that technologies are adopted more quickly if they have a relative advantage (including profitability) over alternatives, are compatible with the adopter's values, are easy to understand and use, can be tested on a limited basis, and have results readily visible to others (232).

Certain behavioral theories have been advanced to explain technology adoption and use by medical providers (280). One is that hospitals are concerned with the perceived quality as well as the quantity of their services and therefore put more investment into expensive equipment than they would if profits were their main motivation. Such technology raises the prestige of the hospital and enables it to compete with other hospitals to attract prominent physician specialists (53). Another theory, which predicts a similar result, is that conflict among physician specialists and between physicians and administrators is resolved by expanding capacity and adopting technological innovations (114). It has also been suggested that physician specialists tend to adopt and use technology more than generalists, both to conform to their medical training and to match their peers (13).

Factors external to medical care providers, such as financing arrangements and governmental policies, affect technology diffusion by encouraging certain kinds of behavior and discouraging others. Chapter 2 described the role of current insurance and usual payment methods in stimulating inappropriate use of individual technologies and inappropriate combinations and settings of technologies. The chapter also outlined proposals to change the financing and organization of medical care so that those who buy or use technologies become sensitive to costs as well as the benefits of their decisions.

A major effect on technology use that is intended from greater patient cost sharing is that use will decrease because price will deter people from seeking medical care. The quantity and total cost (per unit price times quantity used) would fall if people exercised more care in preventing illness and more discretion about seeking professional help for self-limiting as well as other conditions. It is also intended that consumers consider cost when they select providers and technologies to use. Effects on providers are expected to come from providers' reactions to changes in consumer behavior. Providers' sensitivity to the effect of technology use on their patients' finances and to consumers' preferences for low-cost providers and technologies would lead clinicians and administrators to pay more attention to cost in matters concerning adoption and use.

The competitive proposals that would use consumer choice to foster greater plan competition do not stress people's decision to seek care as a point to affect technology use. Instead, competition for enrollees is expected to lead organizations and physicians to make more judicious decisions about the adoption and use of technology—decisions that weigh the costs and benefits involved. Proponents of this approach point out that much of current technology use is discretionary instead of clearly necessary or unnecessary. This situation applies to the number (days of hospitalization for heart attack patients), the kind (surgery or drug therapy for angina), and the setting (inpatient or ambulatory) of technologies used for medical conditions.

With more competition among comprehensive plans, surgical and hospitalization rates, in particular, are expected to be lower. The emphasis on prevention would depend on whether consumers preferred that style of practice and whether providers were responsive to them. Although the process of change may be lengthy, it is expected that expansion of alternative delivery systems (alternative to fee-for-service solo practice) and competitive pressure on other providers would ultimately improve technology use and lower medical costs.

Proponents of greater competition agree that insurance coverage and payment methods have affected the type and pace of innovation (79,89, 190). With innovation as with use, the potential benefits have been emphasized and the costs downplayed. The result has been rapid but costly technological change.

The ease of receiving reimbursement for mainstream medical technologies has been cited as a spur to innovation. With the present extent of insurance coverage and the usual type of payment methods, cost offers little deterrent to innovation, especially for expensive technologies used in hospitals. The incentives for innovation, as for use, are to channel efforts into sophisticated diagnostic and therapeutic technologies and away from preventive and rehabilitative ones. Since cost poses little obstacle to innovation, a new medical technology is valued if it provides even a slight additional benefit to diagnostic accuracy or patient management (235).

Proponents of competitive strategies have not specified in detail the changes in innovation to be expected from restructured financing. They expect the kind of technological change to differ as costs figure more heavily in decisions. Greater cost consciousness by consumers and providers is predicted to increase organizational innovation, for example. The development of alternative delivery systems could be stimulated if they provided the combination of costs and benefits that consumers desire (88,170).

RESEARCH ON TECHNOLOGY USE WITH GREATER PATIENT COST SHARING

There is a consensus that the amount individuals pay for insurance premiums does not affect their decisions about using services, because that cost is not directly linked to use (14,215). Furthermore, any effect on consumers' decisions about technology use are likely to come from charges levied at the point of use, which would raise the patient's price of medical care. These higher charges potentially would influence consumers' decisions about whether or not to seek care and, if so, what to choose.

A prior issue is the extent to which people faced with substantial cost sharing would purchase supplementary insurance. That possibility was raised in chapter 2, and the conclusion was reached that although some people, especially the elderly, might purchase supplementary coverage, the net effect would be a higher level of cost sharing than now exists.

Studies have consistently reported that utilization rates are lower with greater patient cost sharing (15,192,238). These rates represented the combined effects of consumer and provider reactions to cost sharing.

The interim results of the Rand National Health Insurance Study deserve close attention because of the care exercised in designing and conducting the trial (192). The scope of benefits covered is broad, encompassing not only hospital and physician services, but also dental and mental health services, prescription drugs, visual and auditory services, and supplies. The extent of cost sharing is related to family income (either 5, 10, or 15 percent) and limited to an annual maximum of $1,000. Coinsurance rates also vary: 0 (free care), 25 percent, 50 percent, and 95 percent (similar to income-related catastrophic coverage). The study excluded people over 62 years and families with incomes over $25,000 in 1973.

The interim results of the Rand study represent only about 40 percent of the study's eventual total person years (192). With higher coinsurance rates, it was found, the annual likelihood of having a physician visit or hospital admission, as well as the number of visits per person and total expenditures were lower. With coinsurance rates of 50 or 95 percent, total expenditures were 45 to 90 percent below total expenditures with no cost sharing and almost 20 percent below those with 25 percent coinsurance. The lower total expenditures with higher coinsurance resulted because a smaller fraction of people used any services at all and fewer services were used per patient. The price per visit or per hospital admission accounted for little of the difference.

With 50 and 95 percent coinsurance, hospital admission rates for adults were, respectively, about 60 and 40 percent below those with no cost sharing, and about 25 and 10 percent below those with 25 percent coinsurance (see table 3). These interim results are consistent with U.S. rates and the fact that patients' direct expenses for inpatient care average 10 percent nationally. The 1977 national hospital admission rate of 0.095 for a person under 65 years falls between the experimental rates for free care and 25 percent coinsurance (192).

With greater coinsurance, the Rand study found, the likelihood of having a physician visit and the number of such visits were also significantly lower. In 1977, the national likelihood of a physician visit was 0.75 and ambulatory visit rates were 3.9 per person, rates consistent with the partial coverage of physician services that now exists (192). The Rand researchers speculated that less contact with physicians led to the identification of fewer medical problems and less hospitalization. For the interim data, children's admission rates did not differ significantly by coinsurance rate.

In contrast to admission rates, annual expenditures per hospitalized patient in the Rand study did not vary by coinsurance rate. Of the patients admitted, 70 percent exceeded their catastrophic limit, and the experimental plans covered the cost of most inpatient services. The researchers concluded that unless people were exposed to more financial risk, "cost sharing appears to be a poor instrument for affecting costs once patients are admitted" (192).

The researchers' conclusion implies that under different coinsurance rates, cases of equal complexity and severity were admitted. However, in light of the higher admission rates with lower coinsurance, cases less difficult and presumably less expensive to treat may have been admitted more often than under plans with higher coinsurance. If so, the similar average costs per case across plans may mask differences within plans. Under lower coinsurance, were lower costs for the higher percentage of less difficult cases offset by higher costs for the other cases? Or did similar cases receive less intensive care under higher coinsurance rates?

More importantly, the Rand experiment affected only a small portion of the patients of any one hospital or physician. On the theory that providers adjust their practice to the average insurance coverage of their patients, one would not expect hospitals or the physicians practicing in them to change their routine services or charges for the inpatients in the experiment.

An important caveat to the Rand interim results is that the companion data on people's health status have not yet been analyzed (85). The health effects of reduced use are especially important to indicate how much came from fewer discretionary services and how much came at the expense of health benefits.

Smaller scale studies have also found less use of services with greater coinsurance. In 1968, the Palo Alto Medical Clinic, a multispecialty fee-for-service group, instituted a 25 percent coinsurance rate for all physician and ambulatory ancillary services (238). The per capita use of physicians' services declined 24 percent and 4 years later remained stabilized at that low level: 5.2 visits in 1966, 3.9 in 1968, and 3.6 in 1972. The study found that little change occurred in physician visits in hospitals or, similar to the Rand interim results, use for young children.

Table 3.—Interim Results of the Rand National Health Insurance Study: Annual per Person Probability of Use With Different Coinsurance Rates

Coinsurance rate	Visits to physicians	Hospital admissions		
		Total	Adults (> 17 years)	Children (≤ 17 years)
Zero	0.84	0.102	0.133	0.056
25%	0.78[a]	0.081[b]	0.104[b]	0.047
50%	0.75[a]	0.072[a]	0.082[a]	0.057
95%	0.69[a]	0.076[a]	0.094[a]	0.045

[a] $p < 0.05$ compared with zero coinsurance.

[b] $p < 0.01$ compared with zero coinsurance.

SOURCE: J. P. Newhouse, W. G. Manning, C. N. Morris, et al., "Some Interim Results From a Controlled Trial of Cost Sharing in Health Insurance," *N. Eng. J. Med.* 305:1501, 1981.

Even if total use remains about the same, changes in coverage and cost sharing may have differential effects on certain subgroups. Proponents of greater cost sharing favor relating the amount paid to one's income. With cost sharing related to income, the Rand interim results showed similar changes in use for low- and high-income families. Cost sharing unrelated to income could be expected to lower use more among the poor than among nonpoor.

Prior instances of cost sharing have also found greater changes in use among low-income groups. When the Canadian province Saskatchewan levied a $1.50 to $2.00 copayment per physician visit in 1968, use for the poor decreased more (18 percent) than use for the nonpoor (6 to 7 percent) (15). The decline for patient-elective services, such as general practitioner visits, was greater than for physician-elective services, such as laboratory services.

In a similar vein, the few data about use of preventive services have indicated that use is fairly unresponsive to insurance coverage or cost sharing (147). An exception is use by low-income people, who had lower use rates with greater cost sharing, especially for preventive services for children (35,43). For example, in 1972 and 1973 copayments of $1 per outpatient visit and $0.50 per prescription for Medi-Cal recipients did not seem to delay their eye examinations, dental care, or visits for "significant" conditions (24). However, for the copayment groups, immunization rates for children under 6 years were 45 percent lower than rates for the noncopayment group.

Over the past decade, a body of literature has indicated that people's responsiveness to price (elasticity of demand) varies among types of medical services (see table 4). As one would expect, the use of dental services and prescription drugs has been found more responsive to price than physician and hospital use. Under greater competition, hospitals may compete with each other for patients. Pauly has noted that what would matter in that context is the responsiveness to price of people's demand for the services of certain hospitals (210).

Empirical studies have indicated that fee-for-service physicians' use of technologies is sensitive to the additional revenue that they receive (181) and the cost-sharing provisions of their patients' insurance coverage (279). According to 1977 data from the National Medical Care Expenditure Survey, physicians are less likely to initiate ambulatory visits for patients with higher coinsurance rates. Although financial considerations matter, the research also indicated that patients' health status and medical condition have the strongest influence on physician-initiated use.

Table 4.—Estimated Price Elasticity of Demand for Medical Services

Medical service	Estimated price elasticity of demand[a]	Source
Physicians' services	−0.12	M. Feldstein
	−0.20	Fuchs & Kramer
	−0.05	Newhouse & Phelps
	−0.08	Newhouse & Phelps
Hospital services	−0.626 (admission)	M. Feldstein
	−0.494 (length of stay)	
	−1.120 (patient days per year)	
	−0.41/−0.10 (hospital days)	Newhouse & Phelps
	−0.062 (length of stay)	Newhouse & Phelps
Dental service	−1.43	P. Feldstein
	−0.29 to −0.47	Newhouse & Phelps
Prescription drugs	−0.40	Newhouse & Phelps

[a]Elasticity of demand = $\frac{\text{proportionate change in quantity demanded}}{\text{proportionate change in price}}$

SOURCE: Applied Management Science, *Synthesis of Research on Competition in the Financing and Delivery of Health Care,* Technical Proposal in response to RFP 233-81-3031, Department of Health and Human Services, National Center for Health Services Research, Silver Spring, Md., May 13, 1981.

RESEARCH ON TECHNOLOGY USE IN COMPREHENSIVE CARE ORGANIZATIONS

The literature about technology use by alternative delivery systems relates primarily to prepaid group practices and secondarily to individual practice associations (IPAs), both kinds of health maintenance organizations (HMOs). As described in chapter 2, HMOs both insure and provide or arrange covered medical care for their members in exchange for an annual capitation (per capita) payment. Other arrangements, such as preferred provider organizations, have not been studied because they developed fairly recently. This section will examine technology used by different organizations and identify the changed incentives that would face providers.

Most physicians practice alone and receive revenue on a fee-for-service basis (100). But during the past generation, and especially during the past decade, a great variety of medical care organizations have developed and now account for a substantial share of the medical care market.

HMOs of all kinds account for about 20 percent of the market in California, which had 32 plans in 1980 (20,132). In California, 32 percent of Federal and State employees who have had an annual choice among multiple plans, have chosen an HMO option (20)(see app. D). In 1980, HMOs had more than 10 percent of the market in at least eight Standard Metropolitan Statistical Areas (SMSAs): San Francisco, San Jose, 33 percent; Sacramento, 30 percent; Portland, 32 percent; Los Angeles, Riverside, Anaheim, 22 percent; Seattle, 21 percent; Honolulu, 20 percent; and Denver, 11 percent.

Fifty-two percent of the U.S. population lived in an area with an HMO in 1980 (61). Nationally, however, only 4 percent were enrolled in an HMO in 1980, and close to 5 percent in 1981 (61). In 1980, 14 cities with populations over 500,000 and 13 States did not have an HMO (132).

In 1980, one-fourth of all active non-Federal physicians practiced in a group, defined as three or more physicians (96). About 80 percent of all groups receive all of their revenue on a fee-for-service basis; 12 percent have some capitation (prepayment), but it accounts for less than 50 percent of their revenue; and 5 to 8 percent derive 50 percent or more of their revenue from capitation payment (96,119). Although both fee-for-service and capitation groups have similar methods for paying their physicians, capitation practices are more likely to use salary and explicit productivity guidelines, and fee-for-service practices are more likely to base income on some measure of productivity (119). From 1975 to 1980, the number of physicians in capitation groups grew 50 percent, much faster than the 20-percent increase in all physicians (203).

To what extent physicians would respond to a restructured market by affiliating exclusively with a plan is a matter of conjecture. These figures suggest that increasing numbers of physicians are already practicing in ways alternative to fee-for-service solo practice.

The term "alternative delivery system" has usually referred to prepaid group practice and has connoted an alternative to fee-for-service solo practice by physicians. Prepaid group practice differs from fee-for-service solo practice in two major aspects: the group form of organization and the capitation payment method (see ch. 2).

Compared with solo practice, group practice has a greater scope of services—i.e., it represents a greater degree of vertical integration. Three aspects of vertical integration are of interest in this review. One is the combination in an organization of the dual functions of insuring and delivering medical care. This aspect is the focus of proponents of greater plan competition. All types of HMOs fall into this category. Another is an ambulatory group practice, which has a range of physician specialists and basic diagnostic facilities, but uses a separate hospital. About 75 percent of all groups own their own laboratory and about 70 percent own radiological facilities (118). At another level, the hospital-based group has its own hospital. Only about 4 percent of all groups own a hospital (119), but they are some of the oldest, largest, and most studied plans: the Mayo

Clinic, the Hawaii Medical Service Association, Ross Loos, most of the Kaiser-Permanente programs, and Group Health Cooperative of Puget Sound.

In addition to the extent of integration, practices differ according to their method of payment. The incentives of capitation payment and the differences between prepaid groups and IPAs have been described in chapter 2. The IPA combines the insurance function and capitation payment to the insuring organization with fee-for-service and usually solo practice for physicians. In addition, physicians in IPAs usually have a substantial fee-for-service practice outside the IPA. Thus, providers in an IPA do not operate with the constraint of a prospective budget as prepaid groups do (see ch. 2).

There is little patient cost sharing at the time of use in either kind of HMOs. Copayments of a few dollars may be collected for each office visit as a deterrent to patient-initiated use. However, greater cost sharing exists in other organizations. In the late 1960's, the Palo Alto Medical Clinic, an ambulatory fee-for-service group, started a 25 percent coinsurance rate for physician and ambulatory ancillary services.

A problem that plagues comparisons of technology used in alternative delivery systems is whether or not similar people are enrolled in the different plans. Controlling for patient age and sex helps to standardize the rates, but does not solve the problem. Theoretically, people might prefer HMOs if they expect high use from illness, if they prefer that style of care, if they are neurotic about seeking care, or if they do not have an ongoing relationship with another physician because of moving or good health (159). The direction of the total effect is unpredictable: people at lower risk have been found to select a prepaid group in one case (76) and a fee-for-service group instead of a prepaid one in another (239). There is evidence that HMO enrollees are more oriented to prevention and less likely to have a regular physician before enrolling. Any bias toward lower (or higher) use would pertain most to recent enrollees and may decrease over time (159).

Hospitalization

Hospitalization is a technology in itself. Besides the fact that inpatient care accounts for about 45 percent of all personal medical care expenditures (103) and is a prerequisite for the use of many surgical, medical, and diagnostic technologies, the decision to hospitalize a person is often discretionary. Performing diagnosis or treatment on an ambulatory basis may lower lengths of stay and admission rates. Certain surgical procedures may be performed without admission; and for low-risk obstetrical patients, delivery without admission may be an option (285). Hospitalization rates could illustrate how physicians in different organizations and under different payment methods use an expensive technology.

From the small number of comparisons that have been made, there is insufficient evidence that IPAs have lower hospitalization rates. Sixteen cases involving twelve different situations have compared rates of IPAs with those of fee-for-service plans (75,159). Most of the studies (10 out of 16) did not adjust or control for the age or sex of enrollees, a major determinant of hospital use. Cases in which IPA enrollees had lower hospital rates far outnumbered cases of greater use. However, all four cases in which IPA enrollees had more days per 1,000 enrollees came from studies that had controlled for age, and only 2 of the 10 reports of few days per 1,000 enrollees were controlled for age. The majority of the cases with lower use used data unadjusted for age from the Federal Employees Health Benefits Program (75, 220), under which benefits and enrollee contributions differ among plans (see app. C).

There is strong evidence that enrollees of prepaid group practices have lower hospitalization rates than those in plans with fee-for-service, solo physicians, and separate hospitals (159). Of 23 situations studied, 16 reported total inpatient days and admissions or discharges per 1,000 enrollees lower for prepaid groups than for comparison plans. In addition, 12 comparisons of Medicaid eligibles and 1 of Medicare beneficiaries found lower rates in prepaid groups. These studies are better designed than those about IPAs. Almost all, for example, have controlled for the age and sex of enrollees. Luft's review found enrollees in prepaid groups had about 30 percent fewer hospital days, mainly because of lower admission rates rather than shorter lengths of stay. These results were not explained by out-of-plan use (159).

People who select prepaid groups may have previously had lower hospitalization rates (159). Eggers concluded there had been such a selection effect among Medicare enrollees at Group Health Cooperative (76), and an increasing number of studies are being designed to compare use before and after enrollment. It should also be noted that a small number of older prepaid groups figured in the comparisons: seven with the Health Insurance Plan of New York (HIP), an ambulatory capitation group that has had difficulty gaining access to hospital beds; nine with one of the Kaiser-Permanente plans; three with Group Health Association in Washington, D.C.; and three with Group Health Cooperative in Seattle, Wash. These earlier, more established groups may differ from others.

Other kinds of organizations have had low hospitalization rates. The hospital-based fee-for-service group in Hawaii, the Hawaii Medical Service Association, has had low hospitalization rates, although they have been slightly higher than the Kaiser-Permanente plan there. The two plans represent the same level of vertical integration but differ in payment method (268). The possibility of self-selection into these two plans has not been explored.

In another comparison of two group practices in Palo Alto, Calif., hospitalization rates of people opting for an ambulatory fee-for-service group were similar to those in Kaiser-Permanente (282). Inpatient days per enrollee were almost identical, but the admission rate excluding deliveries exceeded Kaiser's by 16 percent. Self-selection into the fee-for-service group by people less likely to be hospitalized may have been a factor (239,282). In Minnesota, the Mayo Clinic and Olmstead Medical and Surgical Group have reported rates comparable to large prepaid groups and much lower than national rates—30 percent lower for hospital discharges and 38 percent lower for inpatient days after age-sex adjustment (193).

Two studies from the 1950's illustrate that management of medical care, resulting in lower hospitalization rates, can be achieved by physicians within solo practice. In one case, solo internists on a retainer reduced by 44 percent admissions among beneficiaries with multiple admissions (143). Management practices have been used to explain the similar hospitalization rates reported for enrollees of the Health Insurance Plan of New York and a union plan that used solo fee-for-service physicians (70).

The combination of capitation payment and group practice has achieved low hospitalization rates, as would be expected from the incentives of payment and organization. The experience of IPAs is that capitation payment to the plan is insufficient; some degree of risk to or management of the physician is needed. While group practices seem to provide this organizational control, other arrangements, such as a physician who manages total medical care and acts as gatekeeper for the use of other services, can produce similar results.

Surgery

Great variation has been noted in rates of surgery within a State, among States, and among countries. In Vermont, for example, age-adjusted tonsillectomy rates across geographical areas have ranged from 13 to 151 per 10,000 persons (277). Since surgery carries the risk of mortality and other complications, such differences raise questions about quality of care (see ch. 4). Here surgical rates are considered as a possible explanation for differences in hospitalization among medical practices.

Many studies over the past 20 years have found lower surgical rates among enrollees in prepaid groups compared with those insured under other plans (280). In the early 1960's, annual surgical rates per 1,000 Federal employees were 39 in prepaid groups versus 70 in Blue Cross/Blue Shield, at the same time that total hospital days per 1,000 were 455 and 826 respectively. Age did not explain these differences (219), and the benefit coverage of the prepaid groups was usually broader. In several studies from that period, surgical rates from prepaid groups were lower than Blue Cross/Blue Shield or traditional insurance plans (70).

A common finding is much lower rates of tonsillectomy in prepaid groups. In several studies, including some with design problems, prepaid groups had uniformly lower rates of hemorrhoidectomy and surgery for varicose veins and usually lower rates for hysterectomy (280). The rates for hernia repair, cholecystectomy, and prostatectomy were mixed (157). Of the four comparisons involving IPAs, the IPA enrollees had lower surgical rates than comparable populations with Blue Shield or indemnity coverage and Blue Cross (159). Two of these concerned Medicaid enrollees in California (101).

Both Luft and Donabedian concluded that enrollees of prepaid groups (and IPAs) had lower surgical rates, but noted that nonsurgical rates of admission were also lower (70,159). In prepaid groups, obstetrical admissions were higher, presumably because of the membership's age; admissions for diagnosis and tests were lower (159); and rates for certain surgical procedures (hemorrhoidectomy, surgery for varicose veins, and hysterectomy) were lower. Otherwise, prepaid groups appeared to have lower admission rates generally, rather than for any particular category that has been discerned.

One of the advantages claimed for organizations that deliver comprehensive care is that they can match their resources to the enrolled population (79). The case of surgery supports that claim. Physicians practicing in groups consistently have higher operative workloads than solo physicians. In 1978, general surgeons in multispecialty groups averaged 8.6 hernia equivalents per week (a standard measure of surgical time and complexity), compared with national estimates of 2.2 to 4.5 weekly surgical operations per physician (118). Physicians in prepaid groups had lower operative workloads than those in fee-for-service groups, although the complexity of the cases for surgeons was about equal. Surgeons in prepaid groups were much more likely than those in fee-for-service groups to perform operations on an ambulatory basis (119). Studies of specific groups confirm such use at the group level. In a Kaiser plan, 32 percent of all hospital surgery was performed on a nonadmission basis compared to 14 percent in a multispecialty fee-for-service group (239). In prepaid groups surgeons also make up a lower percentage of the total physician staff (119).

Ambulatory Physician Services

The level of ambulatory visits in organizations that provide comprehensive care reflects the lower level of patient cost sharing as well as provider incentives. Visit rates for people in prepaid groups are about equally divided between those higher and those lower than the comparisons with traditional coverage and providers. IPAs, whose physicians receive fees for additional services, have almost uniformly had visit rates much higher than the comparisons (159).

Enrollees of prepaid groups are more likely to have at least one physician visit during the year (159). This result is consistent with Rand's interim results that the likelihood rises with lower cost sharing. The exception was a comparison of a Kaiser-Permanente plan and a multispecialty fee-for-service group, which had higher income people (241). There were only four studies of IPAs, and the results were mixed. The extent of cost sharing also seemed to explain different annual visit rates (159). People in prepaid groups had more visits than people with less complete coverage, but fewer visits compared with people with more nearly complete coverage. Prepaid groups appear to have a lower proportion of people with many visits per year, but IPAs do not show this pattern (159). If self-selection is not a factor, these results suggest that prepaid groups control use by means other than cost sharing once a person has sought care. The results are especially striking because the ambulatory rates may be inflated by patients who received care in an ambulatory setting instead of being hospitalized.

In a study of Medicaid eligibles, who all had fairly complete ambulatory coverage, those in prepaid groups had about the same rate of patient-initiated visits as controls (159). Medicaid eligibles in IPAs, however, were more likely than controls to initiate visits. There was no apparent pattern for followup visits. In Seattle, only 26 percent of the poor who were enrolled in a prepaid group had no visits, compared with 36 percent of the poor enrolled in a Blue Cross/Blue Shield plan. Within Kaiser-Permanente plans studied in California, low-income people were as likely as higher income to use some services annually. Regarding accessibility, the review concluded that the views of poor people about HMOs depended on the performance of the local fee-for-service system with which they were being compared (159).

Ancillary Services: Laboratory and Radiology

No consistent pattern of ambulatory use of laboratory and radiological services has been found among different organizations.

In a comparison with a multispecialty fee-for-service group, a Kaiser-Permanente plan used 40 to 50 percent fewer laboratory tests for adults' physical examinations, slightly more X-rays, and two to three times more "other ancillaries" per examination (132). Members of an ambulatory capitation group in Sault Ste. Marie had higher rates for both laboratory and radiological procedures (115). Among the poor in Seattle, enrollees of the prepaid group had higher rates of total laboratory procedures, hematology, urine, smears, and cultures than those in Blue Cross/Blue Shield. The prepaid group members had lower rates of panel battery tests (chemistry profiles), electrocardiograms, and X-rays (132).

Preventive Services

Advocates of HMOs have speculated that capitation payment contains an incentive for providers to use preventive medicine as a less costly alternative to treatment (231), and Federal legislation on HMOs (Public Law 93-222) mandates the coverage of certain preventive services. HMOs would have a greater incentive than other practices to use prevention if their members remained with the organization long enough for it to reap any financial benefits of better health. The mobility of American society and the turnover in plan membership make the existence of this incentive doubtful. Moreover, preventive services, like other medical technologies, vary in their efficacy and cost effectiveness. Some, such as childhood immunizations, are clearly cost effective (281), while others, such as annual physical examinations and diagnostic tests, are more doubtful (23).

An almost universal finding has been that enrollees in prepaid groups and, to a lesser extent, IPAs have higher rates of visits classified as preventive than comparison groups (159). Part of this difference may stem from the tendency of HMO enrollees to be more oriented to prevention. One analyst attributed the higher rate of preventive visits to the more complete benefit coverage of ambulatory and preventive services rather than to the effect of HMOs themselves (159).

This generalization did not apply to the comparison of a multispecialty fee-for-service group in Palo Alto and a Kaiser-Permanente plan (241). The Palo Alto Medical Clinic had significantly higher annual rates of Pap smears (47 percent v. 34 percent of women) and general preventive visits, with the greater use connected with having a regular physician. Although the clinic rate is noteworthy because patients paid a 25 percent coinsurance rate, the clinic also had more women from higher socioeconomic groups, who are more likely to have Pap smears.

There have been too few studies of immunization rates to draw general conclusions. In two (of three) studies, children in prepaid groups had higher immunization rates than controls in fee-for-service solo practices (159). No pattern was evident among Medicaid eligibles with comparable coverage. Children in a Washington, D.C., prepaid group had significantly lower immunization rates, although that study had design problems (16,98). A larger study of Medicaid eligibles found little difference or slightly lower rates in prepaid groups and IPAs compared with fee-for-service controls (101). These two studies reported similar findings for prenatal care—lower or equal use in prepaid groups. The poor in the Seattle prepaid group had higher immunization rates, except for influenza vaccine (159).

Managerial Technologies

Use of many of the clinical and ancillary technologies discussed in previous sections depends not only on clinicians and consumers but also on management. Managers plan, coordinate, and control the activities of their organizations and link them to others outside. In the delivery of medical care, managerial technologies support but are not directly associated with the provision of patient care. Managerial technologies may include hardware, such as computer-based management information systems; organizational structure; planning processes; and staffing policies (141).

Managerial technologies are associated with many of the differences observed among delivery systems. In comprehensive care organizations, the greater degree of vertical integration provides the means to rationalize the resources available and their use for patient care.

The medical care system consists largely of autonomous units that make interdependent decisions without bearing the full cost implications. Transactions among separate units do not always involve a transfer of funds. Physicians usually use hospital facilities and hospitals use the services of community physicians without payment. A practice that directs patients to an independent laboratory does not bear the costs of the tests. This fragmentation often results in duplication of tests and the use of more costly procedures and settings. But this situation persists, because the usual payment method rewards providers for additional use and present insurance coverage largely removes opposition from consumers.

In some cases, the delivery of medical care has become more integrated. The original Kaiser plan included a hospital because no other facilities were available to the workers building the Grand Coulee Dam. Prepaid group practices have sometimes sought to have their own hospitals, because of the added control that is gained over operating procedures and expenditures. In the cases where they have developed, more vertically integrated delivery systems internalize a greater range of costs. An ambulatory group with its own laboratory bears the cost of that operation, and a hospital-based group encompasses the costs of both inpatient facilities and physician services. Coordinating diagnostic tests and therapeutic procedures could be easier and less costly within one organization. A separate hospital may refuse to provide information about patients admitted by an ambulatory group's physician (18), but a hospital-based group would have such information available for concurrent monitoring and control.

To the extent that an organization wishes to increase net revenue (revenue minus costs) and maintain fiscal viability, internalizing a greater range of costs would lead to attempts to lower costs in the production of specific services and in the mix of services provided for a medical condition. This possibility results from the discretion that exists about the combination of medical services used for a particular person and the method of providing them.

The capitation payment method, which entails fixed revenue within a time period, provides an incentive to control technology use and acquisition because additional services add to expenses but not to revenue. The union of the incentives of capitation payment and the management control of group practice underlies the lower hospitalization and surgical rates that have been reported. Although the format of a fee-for-service group gives it the same coordination and control, it does not face the financial constraints of a fixed budget. Like most medical providers, it gains greater revenue from greater use and operates within the relative fee structure that rewards highly the use of sophisticated technology.

In the present medical marketplace, providers are not pressed to adopt organizational structures that are most efficient, or to realize the potential of a more efficient structure. Nor can it be assumed that any lower costs realized are passed on to consumers in lower premiums or charges. This fact handicaps an analysis of different organizations. It is possible to state the theoretical potential and note previous results, but what has been observed is not necessarily what an organization is capable of achieving.

The proponents of competition who emphasize consumer selection of comprehensive care organizations would rely on the organization to control and rationalize technology use. In the managerial area, possible methods include controlling the number and kind or resources available and establishing policies about the coordination of services and the preferred setting for therapy. In the clinical area, information and education about decision analysis and technology evaluation could be directed to physicians and other medical professionals.

In the resource area, management's decisions about the number and kind of physicians can influence the quantity and type of care provided. Kaiser-Permanente, for example, develops annual plans based on physician-membership ratios by specialty. These targets guide the organization's recruitment of physicians, enrollment of members, and personnel budgeting. Prepaid groups have been significantly more likely than multispecialty fee-for-service groups to have pediatricians and obstetricians/gynecologists and less likely to have general surgeons (119). These staffing differences reflect the characteristics of enrollees in prepaid groups (prepaid groups are more likely to have young families), and they both reflect and influence the style of practice (prepaid groups have less surgery). Scitovsky and McCall have pointed out that a multispecialty fee-for-service group also controls the number and kind of physicians added to the group (239).

Also in the area of managerial technology, organizations can control their equipment and facilities. There is some evidence that Kaiser's internal planning process achieves greater regionalization of hospital services than separate hospitals. One study found that compared with other non-Federal short-term general hospitals, Kaiser hospitals in the San Francisco area were less likely to have certain facilities, and, when present, these facilities tended to be in the larger Kaiser hospitals (161). The facilities were postoperative recovery room, inhalation therapy, intensive care unit, electroencephalography, diagnostic radioisotope, and genetic counseling. Kaiser hospitals were more likely to have social work departments and home care. Psychiatric inpatient facilities, psychiatric partial hospitalization, and occupational therapy departments tended to be in smaller Kaiser hospitals. The study concluded that the Kaiser system has some fully equipped larger hospitals and some smaller ones equipped for emergencies and chronic care (161). Because of the lower density of Kaiser hospitals in the San Francisco area, members may have longer travel times.

Hospital-based group practices can plan the number of hospital beds per capita available for their members, just as they do physician-membership ratios. Kaiser-Permanente plans use that approach. Ambulatory groups can contract with a hospital, and perhaps negotiate a discount (112). An ambulatory group may also be able to negotiate certain arrangements concerning its patients, such as routine tests performed upon admission (112). The existence of facilities can affect the use of certain procedures. Kaiser-Permanente may have performed more of its surgery in its hospital on a nonadmission basis because that hospital was a part of the organization (239). The lower rates of diagnostic admission generally reported for prepaid groups may reflect that greater ability to coordinate testing within a group practice and the incentive from capitation payment and comprehensive benefits to constrain hospital admissions.

Medical practices can also provide clinicians and departments with information to influence and to control decisions about technology use. Kaiser-Permanente in northern California has long provided regular notifications of the full-time equivalents and budgets as part of its planning and control procedures (44).

Theoretically, the combination of the insurance function and provision of medical care would entail greater monitoring and control over providers. The examples cited suggest that these activities occur in prepaid groups. Utilization review and preadmission certification have been used in some IPAs to limit hospitalization. Overall, however, there is insufficient evidence that IPAs have achieved lower rates. This finding may reflect the caveat expressed earlier, that the current medical marketplace does not press providers to achieve the level of efficiency of which their organization is capable. This caveat also applies to the fee-for-service sector, particularly to fee-for-service groups.

Total Expenditures for Medical Care

It is insufficient to consider piecemeal the use of specific technologies. More important is the overall expenditure level, which includes the mix of technologies used and their relative costs. Consideration of expenditures needs to be coupled with information about the benefits achieved, a matter taken up in chapter 4. There is no evidence that either the prepaid group practice or IPA form of HMOs produces any of the specific services used, including cost per inpatient day, at lower cost than solo fee-for-service practices (159). Information about total annual expenditures relates to the overall management of medical care for enrollees.

Total annual expenditures for medical care by an insured person consist of premiums paid for coverage under a plan plus any additional out-of-pocket expenses.* The few studies that have reported both pertain almost exclusively to plans on the west coast.

Study designs prohibited the attribution of effects observed among certain factors; the plans compared usually differed in benefit coverage, age-sex distributions of enrollees, payment method, and integration levels. On the basis of the large and consistent differences, reviewers have concluded that total annual expenditures are lower for enrollees of prepaid group practices than for enrollees of conventional plans that reimburse fee-for-service, mostly solo providers (70,157,231, 282).

Five of the six studies of the general population included at least one of the Kaiser-Permanente plans in California, which are hospital-based prepaid groups (159). The sixth included the Health Insurance Plan of New York, an ambulatory prepaid group (3). For IPAs or foundations for medical care, under which the plan receives a capitation payment but pays independent physicians by fee-for-service, the results were mixed and showed no clear pattern compared with conventional plans (70,231).

A similar expenditure pattern has been reported for people eligible for Medicaid and for those with low income. Two prepaid groups, an ambulatory one in the District of Columbia and a hospital-based one in Washington State, had total annual per capita expenditures 34 to 37 percent lower than conventional plans over a 3-year period (99, 169). Benefits and age and sex of enrollees were similar for the plans compared. In contrast, there was no evidence that a medical foundation affected the total expenditures per Medicaid eligible in San Joaquin County, Calif. (123). During the years studied, 1969 and 1970, the medical foundation was not at risk for hospital care, and, although the plan received revenue by capitation, physicians were paid on a fee-for-service basis.

In 1969 and 1970, Medicare payments for elderly beneficiaries in five of seven prepaid groups were less than for a control group comparable in county residence, age, and sex (51). All five groups with lower expenditures than controls owned or controlled their own hospitals, while the two groups with higher expenditures were ambulatory groups with no such hospital control (275). Although consistent with the expected effect of greater vertical integration (280), the results are only suggestive because of other differences, such as the plans' sponsorship, selectivity of enrollment, size of Medicare population, and hospital occupancy rates. The most obvious differences in the two higher cost plans were in region (both were in New York City) and in their use of part-time physicians. Also noteworthy is that Medicare's capitation payment to a plan covered only in-plan physicians' services.

RESEARCH ON INNOVATION

In the general literature on technological change, there is disagreement about the relationship between competition and innovation. One theory is that competition provides an incentive for firms to adopt new techniques. The view of Schumpeter and Galbraith, however, is that firms under imperfect competition have more resources for research and development and more incentive to innovate, because their market control allows them to keep any resulting profits (165). Researchers have found no definite relationship between innovation and the degree of competition (138). Intermediate levels of competition instead of extremes may be most conducive to innovation (134).

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*A portion of the taxes that people pay also goes toward public funding of medical care programs, such as Medicare and Medicaid. Another consideration is tax expenditures, the losses in Federal revenue that result from the tax savings allowed by the tax code for certain groups. In the health area, Federal expenditures on medical care for poor people are offset by tax expenditures from the deductibility of health insurance premiums and certain medical expenses, which favors high-income groups. The low-income group benefits the least (278).

The theory has been advanced that hospitals now compete in nonprice ways by adopting sophisticated technologies to attract prominent physicians (235). The empirical evidence is far from conclusive.

In one study, certain facilities, namely electroencephalography, X-ray therapy, organ banks, and outpatient renal dialysis, were concentrated in nearby San Francisco hospitals, as one would expect if hospitals were using them to compete with each other (161). Both the extent and speed of adoption have been studied. The adoption of open-heart surgery occurred more often in less highly concentrated hospital markets, but no relationship was found for other technologies (235). Massachusetts hospitals were more likely to adopt most technologies, except computers and radioisotopes, if more local ones already had them (53).

Similarly, Russell found that prior local adoption speeded the adoption of intensive care units and electroencephalographs by the remaining hospitals (235). This pattern did not apply to diagnostic radioisotopes, and an appropriate measure was not defined for open-heart surgery, cobalt therapy, or renal dialysis (235). Greater but not faster adoption of intensive care units, open-heart surgery, cobalt therapy, and renal dialysis occurred in States with more physicians per capita (53).

Under greater cost sharing, any market pressure from patients' price sensitivity would relate to separate services. Patients might refuse to be hospitalized, or at least question the matter. Patients' cost concerns could also be conveyed through their physicians to hospitals, so that hospitals were more apt to adopt more cost-decreasing or fewer cost-increasing innovations. It is unknown whether hospitals would choose to compete in such new ways on the basis of costs.

There has been some work on hospitals' adoption under different regulatory approaches to cost reimbursement. Although these situations differ greatly from the competitive ones proposed, they shed light on how hospitals have behaved when attempts were made to constrain costs (271). A recent study examined hospitals' responses to prospective reimbursement (269). Prospective reimbursement sets rates in advance, but the unit of payment (per diem, per service, per case) and the mechanism for adjusting rates vary. Prospective reimbursement significantly speeded the adoption of cost-decreasing centralized energy management in Maryland and delayed it in New York. In New York and, to a lesser extent in Maryland, the number of electronic fetal monitors, upper gastrointestinal endoscopes, and infusion pumps acquired was lower (269).

Although greater cost sharing might lead to fewer admissions and a smaller number of patients for whom hospital technologies would be used, catastrophic coverage might have offsetting effects, and the development and adoption of new technologies might be channeled into areas of expensive acute and chronic care, which were not subject to cost constraints. With an income-related catastrophic limit, greater cost sharing would affect ambulatory care, most of which would come within the annual threshold and would be paid by the patients. To the extent that providers felt pressed on costs, innovations that were cost decreasing, or less cost increasing for similar purposes, would be expected in managerial, clinical, and ancillary technologies related to ambulatory care.

A great deal of innovation is already taking place in managerial technologies related to hospitals (141). One line of activity is to refine techniques for measuring the performance of physicians. In New Jersey, for example, reimbursement of hospitals is being tied to resources used for different "diagnostic-related groups," which are intended to represent standardized patient cases. Another development is organizational change in hospitals. By 1976, more than one-fourth of all hospitals were participating in multi-institutional arrangements.

Both greater cost sharing and greater plan competition are expected to produce innovations in organizational forms of delivering medical care, another area of managerial technology. In fact, this development has apparently occurred in response to the establishment or growing market share of the prepaid group practice form of HMO (see app. D). Most common is the formation of an IPA, but other organizations have also developed. In Denver, for example, a preferred provider organization, which includes physicians selected for their low-cost practice patterns, began as an apparent response to the growth of a local Kaiser-Permanente plan (171).

There is no indication that the practice styles of prepaid groups or other comprehensive care organizations diverge greatly from the styles of other medical practices. This similarity is to be expected, since physicians, as professionals, are guided by external standards of the profession.

The key is that these organizations do not have to acquire a new technology to use it. They can rely on outside facilities and even screen outside use of the technology. The organization may wait until its volume of use reaches a point at which it is cheaper to own its own unit. This approach has the cost advantage of avoiding the startup phase, when volume is low and cost per unit is high, and avoiding the purchase of a new technology during the early phases when improvements are being made.

Kaiser-Permanente in Northern California used this strategy with computed tomography (CT) scanning (206). The plan initially arranged to use an existing machine outside the organization. Only when volume had reached the point at which the cost to buy the service exceeded the cost of producing it internally was a head scanner ordered. Kaiser similarly contracts with a nearby university hospital for its open-heart surgery (77). Several prepaid group practices, including those of Kaiser-Permanente and Group Health Cooperative of Puget Sound, routinely assess the relative costs of buying the services of expensive technologies from outside the group or of acquiring the technology and producing the services internally (45,273).

A recent study examined whether or not prepaid groups were less likely than other local practices to use amniocentesis, a diagnostic innovation that does not require a large capital investment (41). In New York City (Health Insurance Plan) and Southern California (Kaiser), the rates were about equal to those for other eligible women. In Washington State (Group Health Cooperative) and Oregon (Kaiser), the rates within the prepaid groups were about twice the local rates (41).

LIKELY EFFECTS OF INCREASED COMPETITION ON TECHNOLOGY USE AND INNOVATION

Greater Patient Cost Sharing

Greater patient cost sharing at the time of use clearly deters people from seeking care. Compared with present health insurance coverage, income-related cost sharing up to a maximum or catastrophic expense limit would reduce the percentage of people who receive hospital and physician services. There would be less effect on other services, which are already subject to more exclusions and cost sharing.

The reduction in patient-initiated use of these technologies would come about in different ways. One is that fewer people would be willing to pay the additional cost to see a physician or enter a hospital. In some cases, people would not seek or obtain care for a medical condition at all. In other cases, and especially for expensive hospital care, a person's reluctance to pay the large sums associated with a hospital admission could lead the physician to use alternative, less expensive settings to provide the care. In general, initiation of care for children would be affected less than care for adults.

Use of preventive technologies, which people may initiate themselves, would not be much affected by greater cost sharing, because present insurance often excludes such coverage and because people's preventive use has not been very responsive to insurance coverage. An exception is use of preventive services for children in low-income families, technologies whose use has been lower with greater cost sharing (24,35,43).

Even with annual catastrophic expense limits that were related to income, it seems likely that low-income people would be deterred from seeking care more than others because of the initial sums involved. Elderly people, who are more likely to have low incomes, would be more affected than people of other age groups. Cash grants to people below the poverty line, as Feldstein suggested (88), could ease this effect.

At least initially, most of the people who did receive medical care would each use fewer and less expensive services. Part of this effect would occur because patients would not return for additional visits that physicians recommended or would not follow their physician's advice to have diagnostic tests or therapeutic procedures performed. Patients might be less inclined to seek second opinions, at least for procedures that were not very expensive, if they had to pay the full cost for the other physician's consultation. People might also resist undergoing medical or surgical treatment for conditions that were not life threatening and only a minor inconvenience.

In addition, people's reluctance to pay for an additional followup visit for acute or chronic conditions, for an expensive hospital stay, and for other technologies might lead physicians to recommend and use them less frequently. The technologies most affected would be those that physicians felt would provide little additional diagnostic information or little therapeutic or preventive benefit.

Because of the effect on their incomes, physicians would be likely to limit the use of technologies that were provided by other medical professionals or organizations more than the use of their own. And within their own practices, physicians would forego the use of less costly technologies more readily than the more expensive ones, especially if the practice had a sizable investment in a piece of equipment that was being paid for by charges for its services. There would be less tendency to hospitalize people for diagnostic workups and for surgery that could be performed on a do-not-admit basis.* If there were fewer admissions, the use of associated technologies would correspondingly fall. The medical care provided to children would be much less responsive to cost considerations.

Patterns of technology use in hospitals would respond to cost-sharing incentives more slowly than those in physicians' practices. Change would occur more gradually in hospitals, because more people are involved in the decisionmaking of a large organization. Although a hospital could try to streamline its operating budget in the short term, its present plant and equipment would constrain changes that could be made in the capital budget. An existing piece of equipment might be used until its capacity was approached, when more discussion about its appropriate use and price would surround the decision to replace it or buy an additional unit. Another factor restricting a hospital's ability to change is the standards of outside review bodies. Certain tests routinely given to hospital patients and some hospital operating practices fall into this category.

That expenses above the maximum annual limit would be paid with no patient cost sharing would support the prediction that the use and innovation of medical technology would be channeled in the direction of expensive care. If a person's annual threshold was approximately $2,000, for example, most surgery, recurrent cases associated with some chronic conditions, and most hospital stays beyond a few days would exceed the limit. People might resist having the surgery or hospital admission because of the cost, but once the limit was passed, cost would not be a consideration. These cases are the ones for which physicians and especially specialists are trained to use sophisticated and expensive diagnostic and therapeutic technologies. They are also the cases in which patients are less likely to question medical advice and more likely to expect that all available technology be applied to help them. It thus appears that the use and price of technology at the upper end of the cost spectrum would be largely unrestrained. In addition, hospitals and physicians, faced with a potential loss of revenue or income, might try to maintain their incomes by trying to expand the use of expensive inpatient technologies.

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*Do-not-admit surgery is performed in a hospital, but patients are not admitted as inpatients.

If everyone had catastrophic coverage, the financial protection accorded to most people might not be very different from the current situation. Because of the increasing tendency for private insurance policies to include catastrophic coverage and the development of public programs such as Medicaid, people of all ages have a very low chance of having to pay catastrophic expenses (see ch. 2). What would be notably different is the complete coverage for large expenses relative to others. The use and price of low- and moderate-cost technologies would be restrained by the fact that patients would have to pay a sizable portion of their cost. With the tighter constraints on lower and moderate costs, technologies with high total cost for a patient's condition would be an attractive outlet for innovation and use. The total effect on use and cost is unclear; fewer cases would reach the catastrophic limit, but those that did would be treated more intensively.

How particular technologies would be affected by greater cost sharing would depend on the definition of minimum benefits to be included in comprehensive coverage. The Rand results discussed previously came from an experiment with a broad definition of comprehensive coverage that included mental health and dental services, prescription drugs, and visual and auditory services (192). In general, it can be said that technologies included in coverage would have their use and price restrained up to the threshold of the annual limit, but not beyond it. Among the technologies included in coverage, consumers and medical providers would select which technologies to use on the basis of whether their costs were commensurate with their benefits, without artificial boundaries created by insurance coverage. An important example is long-term care. This area of medical care is most responsible for catastrophic expenses, especially for elderly people. Access to long-term care facilities can also reduce the cost and length-of-stay in acute-care hospitals. Inclusion of long-term care in standard benefits could afford people greater financial security and could help to make hospital use more appropriate, but it could also account for large expenses.

The effects of greater cost sharing on technology over a longer period of time are more difficult to predict. Studies of greater cost sharing have found that within 3 or 4 years, lower levels of use have developed and persisted. There is the possibility that delaying care would lead to greater use for some people in the future, if conditions that could have been identified and treated early are not found until they are more severe and difficult to treat. Balancing that possible source of a long-term increase in use and cost is the fact that some undetected conditions are self-limiting and some can be diagnosed but not successfully treated by medical care.

Empirical studies of greater cost sharing have traced the effect of changes for a limited number of consumers, physicians, and hospitals in an area. The effects might be much different if the changes applied to everyone. This caveat applies particularly in an era when the number of physicians is forecast to increase by 75,000 in 5 years (203). An overall decline or slower rate of growth in medical expenditures implies less income for providers. With continuation of fee-for-service payment and charge- or cost-based reimbursement, providers might try to offset less patient-initiated use (14). Providers might raise the prices of their services; emphasize more expensive services (such as, a complete instead of a partial physical examination); or "unbundle" services by charging separately for procedures previously billed together and more cheaply.

On the other hand, if providers in an entire community responded in the same direction as they have in the limited changes that have been studied, the results observed so far might underestimate the impact on cost and use. The effect on practice style from a systemwide change might be much larger if providers responded to the average level of their patients' insurance coverage. Also supporting that prediction is the view that medical providers, like others who wish to increase the sale of their services, would face consumers who are more careful about price and quantity when they are paying a substantial portion of the cost.

Even if providers responded by becoming more cost conscious, conflicting factors would act on hospitals and other organizations. Pressures to restrain costs would lead them to adopt cost-decreasing technologies, such as systems to manage energy use more efficiently. It would also lead them to scrutinize more carefully requests to purchase expensive equipment, especially if the hospital already had one such unit or if the technology was new and its use uncharted. A hospital might resist acquiring expensive technologies designed for unusual conditions and hence likely to have only low levels of use in one institution. Efforts to constrain costs might intensify the efforts of hospitals, other providers, and insurers to adopt different managerial technologies, such as mechanisms to monitor costs or alternative organizational arrangements.

From the other side, a hospital in a more competitive environment might rush to purchase a new technology considered to have great potential so that it could recoup its investment before others had acquired it. The lack of cost contraints on catastrophic expenses would spur the development and use of costly halfway technology* for medical conditions that lend themselves to lengthy or intensive care. Also encouraging technology adoption and use would be the fact that medical providers would continue to be motivated and guided by the standards of their professions, which call for helping their patients, often with the use of expensive technologies.

The innovation of medical technology would be subject to these conflicting influences. Increased cost sharing would stimulate greater innovative activity and presumably more innovation in managerial, ambulatory, and cost-decreasing technologies. The effect on clinical and ancillary technologies and particularly expensive equipment is less clear. Fewer hospital admissions and greater pressure for providers to be efficient would predict less adoption and use and hence less innovative activity in these areas. However, unrestrained expenditures for expensive (catastrophic) care would have the opposite effect of stimulating use and innovative activity related to sophisticated and costly technologies.

Competition Among Comprehensive Care Organizations

On the basis of previous enrollment trends when people have had a greater choice of plans, prepaid group practices primarily and IPAs secondarily would accelerate their growth in membership, physicians, and market share (see app. C). The development of different organizational arrangements that combine the insurance and provision of medical care would also continue at a more rapid rate. Both commercial insurers and Blue Cross/Blue Shield plans would become even more involved in sponsoring such organizations and in overseeing their operations.

These organizations would be competing for enrollees on the basis of total costs to consumers (premiums plus out-of-pocket expenses) for the coverage, quality, and style of practice provided. There would thus be market pressure for them to produce services efficiently and to use the most efficient (lowest cost for a given level of quality) combination of technologies for the conditions and members under their care.

Even in the current context, prepaid group practices have been subject to financial pressures because they receive revenue predominantly by capitation payment, but they have so far had too small a market share to have had any discernible effect on community use or cost (see app. D). If organizations that felt similar pressures for efficiency predominated or exerted sufficient pressure on the others, it would be possible to make certain predictions about the use and innovation of medical technology. These changes would be relative to the present in which medical care is delivered primarily by fee-for-service solo practices and in which insurance coverage is widespread.

If the cost sharing for initial physician visits and other ambulatory care were lower, as it is in prepaid groups, cost would deter people less from seeking care. Both low- and high-income enrollees would have a greater likelihood of having some contact with the medical care system during the year. People covered under Medicaid would have at least the same rate of patient-initiated care as they do now.

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*Halfway technologies alleviate the effects of but do not prevent or cure disease and are usually expensive (255).

Once people entered the medical care system, the comprehensive care organization would control their use of technology. If greater market pressure from other delivery systems restricted premium increases and made prospective budgets more restrictive, the organization would take measures to operate more efficiently. Since the organization would integrate the delivery of comprehensive care, it could make decisions about allocating personnel and other resources as well as the use of alternative technologies across the range of medical care. To be successfully implemented, these decisions would have to balance the preferences of consumers, clinicians, and administrators.

In the ambulatory area, more attention would be paid to the use of diagnostic technologies and drugs, which have low per unit cost but can account for a substantial portion of total costs. Laboratory and radiological tests that give unnecessary or redundant results would be discouraged. Depending on its availablility, information related to the appropriateness and sequencing of tests and drugs would be channeled to clinicians. In the short term, these effects would be retarded in practices that already had expensive diagnostic equipment. As the equipment wore out or became obsolete, the long-term result would be lower rates of acquiring such equipment and of using drugs and laboratory and radiological tests.

The per capita rate of ambulatory visits would remain about the same or fall. The visit rate would combine the effect of fewer followup visits for many medical conditions and of relatively greater use of the ambulatory setting instead of the hospital. If market pressure were greater than now felt by prepaid groups, the organizations might try to curtail visits. One possibile target would be visits now classified as preventive that involve technologies, such as annual physical examinations, that are not cost effective. Comprehensive care organizations would not necessarily provide more immunizations or counseling about methods to manage chronic conditions, such as diabetes, or about nutrition or lifestyle. If consumers had strong preferences in these areas or if the technologies could save costs for the organization, these activities could be undertaken.

Hospitalization rates would be lower for all age groups and income levels. These lower rates would apply across the range of diagnostic categories, reflecting the great degree of discretion that exists in the practice of medicine. Surgical rates in particular would be lower. Over time, the adoption and use of technologies associated with hospitalization would be correspondingly lower. This effect would be manifested gradually as equipment wore out and was not replaced.

In both ambulatory and hospital settings, pressures to limit costs would spur the adoption and use of cost-decreasing technologies. Managerial technologies would be a fertile area for innovation. Depending on legal and professional restrictions, different staffing patterns might emerge. A lower percentage of surgeons on the physician staff is one example. If less costly, other health professionals might be substituted for physicians. As more care would be shifted from an inpatient to an ambulatory basis, one would expect more innovative activity to surround the delivery of ambulatory services. Deliveries of low-risk mothers and babies and certain surgery would shift increasingly to a do-not-admit basis, and other procedures would follow. Also in the managerial area, pressures to limit costs might lead the physicians and institutions that now operate separately to forge links.

In effect, most prepaid group practices now cover catastrophic care by having no limits on physician and inpatient services. The way these practices handle catastrophic or high-cost cases would likely continue. The organization would exert control over expensive or lengthy cases in advance through the equipment, staff, and facilities that are available, such as long-term care as an alternative to more costly acute-care hospitals. The organization might also have standing arrangements and predetermined rates with outside providers for rarely used technologies, such as open-heart surgery. Clinicians, who would be aware of the organization's budget and facilities as well as patients' medical needs, would continue to make decisions about the use of technologies for individual patients.

Although catastrophic coverage would be more widespread in a restructured system, under the proposal for greater competition among comprehensive care or organziations, catastrophic care would be controlled by providers and would be unlikely to take a larger share of total medical care expenditures. In fact, the portion would probably decline if market pressures pushed providers to greater efficiency in the way they treated these cases early in the episode and comprehensive coverage encouraged use of less costly settings and technologies.

Like the effects of greater cost sharing, the effects of greater competition among alternative delivery systems would depend on the definition of benefits to be included in comprehensive care. Again, long-term care exemplifies a technology that would reduce expensive hospital care, but could itself constitute a sizable expense.

The above speculation has proceeded as if organizations would compete by rationalizing technology use and by operating more efficiently, but other responses are possible. Price competition could lead competing delivery systems to skimp on the adoption and use of technologies for their enrollees, a matter of quality of care that is considered in chapter 4. Instead of tackling the more difficult problems of relating to providers and promoting efficient technology use, insurers might use their marketing expertise to seek enrollees likely to be low users. Furthermore, Americans associate sophisticated technologies with high quality, particularly in medical care. Plans or providers might vie for enrollees in ways different from those intended—e.g., by acquiring and using such technologies.

IMPLICATIONS FOR POLICY

Regionalization of specialized facilities would continue to be an issue under both competitive strategies. Even large comprehensive health care organizations would not have sufficient volume to justify all the equipment and surgical facilities that their patients would use. Regionalization of such facilities might both lower costs and improve quality (162,172). Different responses by providers are possible under greater competition. Hospitals, for example, might compete for patients and physicians on bases other than price by acquiring expensive technologies and appealing to the inclination to associate them with quality and prestige. Another possibility is that in the face of strong market pressure to limit costs, no hospital in an area would be willing to acquire expensive technologies used for medical conditions with a low prevalence. Under greater cost sharing, expensive technologies would not be restrained by market pressures.

These potential problems suggest that some kind of areawide coordination would be needed with regard to the number and placement of specialized facilities that no single organization would have sufficient volume to support with its own patient load. Enterprises might develop to provide such technologies on referral or by contract. Possible governmental approaches range from relying on local and State activities and placing certain facilities in medical schools and teaching hospitals, to changing the emphasis and continuing the federally supported Health Systems Agencies. With increased cost sharing, attention to expensive technologies used for catastrophic care would also be warranted.

If the pattern of technology use in prepaid groups were considered desirable, certain constraints could be removed from the growth of such groups. The Federal Health Maintenance Organization Act (Public Law 93-222) requires for qualification that plans cover certain benefits, have specific structures, and follow certain procedures with respect to premium rating and enrollment. About half of the organizations considered HMOs are not federally qualified. Moreover, financing arrangements under Medicare and Medicaid discourage HMOs from seeking the beneficiaries as enrollees.

Easing the requirements for Federal qualification, perhaps in line with State laws about HMOs, would remove disadvantages that HMOs have relative to other plans that are not so restricted. Guaranteeing Medicaid eligibility for a certain period would reduce a barrier to HMO enrollment. The experience of Project Health in Portland, Oreg., indicates the feasibility of giving publicly supported beneficiaries a choice of plans, including a prepaid group (see app. D).

In a restructured situation, as in the present, medical providers would need evaluations of technologies. The interest of the medical community in information about the efficacy, safety, and cost effectiveness of technologies has grown greatly in recent years. If physicians, hospitals, and insurers faced more market pressure to limit costs, they would increasingly turn to evaluations of alternative technologies to guide their decisions about adoption and use. Large, well-established prepaid groups, which may be subject to such pressure, already develop some of their own information. Since it is difficult to retain exclusive control over information once it is developed, no one entity may find it financially worthwhile to undertake the initial expense. Yet the benefits to providers, consumers, and insurers would be widespread. Representing the social interest, Government could fund evaluations conducted in the public or private sector or sponsor a private consortium to do so (208).

4.

Effects of Increased Competition on the Quality of Care

> Look to the essence of a thing, whether it be a point of doctrine, of practice, or of interpretation.
>
> —*Marcus Aurelius Antoninus*
> *Meditations*

Contents

Page

Dimensions of Quality 55
  Perspectives 55
  Measures 56
Context of Quality Considerations 57
  Current Levels of Quality 57
  Intended Levels of Quality 58
Research on Quality of Care With Greater Patient Cost Sharing 59
  Initiation of Care 59
  Selection of Providers 61
  Choice of Technologies 61
  Equity Considerations 62
Research on Quality of Care With Competition Among Comprehensive Care Organizations 63
  Initiation of Care 63
  Selection of Providers 64
  Choice of Technologies 64
  HMOs v. Traditional Fee-For-Service Practice 65
  Equity Considerations 66
Likely Effects of Increased Competition on Quality of Care 66
  Greater Patient Cost Sharing 66
  Competition Among Comprehensive Care Organizations 66
Implications for Policy 67

List of Tables

Table No. *Page*

5. Different Perspectives on Dimensions of Quality of Care 56
6. Comparison of Quality of Care in HMOs and Other Settings: Scoring by Structure, Process, and Outcome Indicators 65

4.

Effects of Increased Competition on the Quality of Care

The ultimate goal of the provision and utilization of technologies in the medical care process is a healthier population. The road to this end result, though, is made up of a great many other factors that determine health status. Genetic, environmental, lifestyle, and other factors not related to medical care can exert at least as much influence on health outcomes as medical care itself.

The timely and appropriate use of technologies in the medical care process, nonetheless, has important implications for the health of the Nation. Technologies can prevent, diagnose, and cure disease. In the unnecessary or insufficient provision of medical technologies, harmful side effects to the individual are possible. Even if not harmful, unnecessary utilization represents a wasteful use of resources, which is socially undesirable.

Quality of care has traditionally been promoted in a number of ways. For example, the oldest method has been the education and training of physicians, nurses, and other providers of care. These providers, as a professional group, have also internalized codes of values, standards, and priorities to guide their preservation and improvement of the individual and social good alike. In addition, professional and governmental bodies have undertaken licensure, accreditation, and certification of individual and institutional providers as measures to ensure minimum levels of competence. Biomedical research, technology evaluation, and health services research in part seek to improve the quality of medical care.

A more recent approach has been to alter arrangements for paying the providers. More widespread health insurance has improved the accessibility of medical care, particularly for elderly and poor people. But these financial arrangements contain incentives for inappropriate technology use. The procompetitive proposals, as alternatives to these current arrangements, encompass concerns about quality as well as cost.

Even if proposals to increase competition generate medical care utilization patterns that moderate rising medical costs, a key question will remain: have these costs been moderated at the expense of lowered quality of care? A number of important issues related to quality are discussed in other chapters of this report, including measures of utilization and costs of technologies as well as issues of consumer information (see chs. 3 and 5). But emphasis on such issues is somewhat incomplete without an examination of their relation to quality and the resulting implications under a procompetitive process. The specific concern and analysis in this chapter is with the changes in the levels and distribution of quality that are likely to result from shifting patterns of use under proposals to increase competition.

DIMENSIONS OF QUALITY

Perspectives

Quality is, as Luft (159) has called it, "a devilishly elusive concept." Quality of medical care is a multidimensional concept, and its meaning can vary according to the state of knowledge and the values of an individual and a society. Different people use different measures for quality determination, and often the measures are difficult to interpret. More care is not always better, nor is it always worse (200).

The quality of care delivered refers to its effect on health. To assess quality of care, therefore, requires that a judgment be made about effectiveness. The criteria used in arriving at that judgment will vary from one situation to another, depending on the perspective adopted and the specific objectives being pursued. Not surprisingly, the formulation for evaluation of an operational concept of quality that takes into account its many aspects is difficult. As a result, quality per se usually is not defined in precise terms. Instead, the different dimensions of quality, which depend on one's perspective, are described.

Providers, consumers, and society stress different aspects of quality (see table 5). Although both consumers and providers consider technical competence to be of central importance, consumers place a greater weight than providers on ease of access, continuity, prevention of disease, and the humanization or interpersonal aspects of care.

The technical component of quality refers to the application of the science and technology of medicine, and of the other health sciences, to a personal health problem (67). The interpersonal component of care refers to the provider's relationship with the consumer, including the "milieu, manner and behavior of the provider in delivering care to and communicating with the patient" (27). Amenities of care refer to the more frivolous or nonessential services and are not included in quality.

The technical and interpersonal components of care are acknowledged not only to have approximately equal importance in evaluating care, but also to constitute a mutually reinforcing set (26,67,283). Indeed, it is the inspiration or necessary confidence gained from the interpersonal aspect of care that often allows and sustains the technical component of the therapeutic process. Nevertheless, the technical component is the component that is more likely to be documented in the patient's record, and as a result, is the better studied one. The development of criteria and measures for evaluating the interpersonal component lags far behind what has been accomplished in that respect for technical care (284).

Table 5.—Different Perspectives on Dimensions of Quality of Care

	Perspectives		
Dimensions of quality	Provider	Consumer	Society
Technical structure (training, board certification, other)	††	†	
Technical process in treatment of disease	††	†	
Prevention of disease	†	††	
Humanization/interpersonal aspects		††	
Ease of access (availability, affordability, acceptability)		††	
Continuity of care		††	
Equity/distribution			††
Economic efficiency			††

Key:
† = of importance.
†† = of greater importance.

SOURCE: Office of Technology Assessment.

In contrast to consumers and providers, society evaluates results of care as they affect standards of health of the population and as the social and economic efficiency of the system conforms to society's priorities. Society, unlike consumers and providers, is apt to take into account the presence of mechanisms to correct inequities related to ability to pay, and the presence of the external or shared benefits that accrue to society when a given person receives care.

Measures

Although quality has not been specifically defined, assessments of quality of care can be performed and classified in terms of whether judgments were based on either structure, process, or outcomes (70):

- Assessment of *structure*, the settings and instrumentalities available and used for the provision of care, focuses on the characteristics of the persons and organizations that provide care.
- Assessment of *process* evaluates the activities of physicians and other health professionals in caring for patients.
- Assessment of *outcomes* evaluates the effects on physical, emotional, and functional wellbeing.

Outcomes could be thought to provide the best measure of quality, since they reflect the extent to which one's health is maintained or improved. The provision of health technologies and services, however, is only one of the factors that determine outcomes, at least when the latter are measured in terms of health status. Outcomes are thus a meaningful reflection of quality of care only to the extent that they can be attributed to specific elements of the process or structure. For the same reason, evaluations that focus on the process or structure of care must address activities that are believed to contribute to desired outcomes (284). Data about outcomes are also difficult to obtain and often capture only a small part of true outcomes (159).

Structural measures, such as physicians' training and specialty board certification, have often been used as criteria to evaluate quality because the required data are relatively easy to collect. An important weakness of such measures is that they have usually been developed from a single model of medical care delivery, with little regard for changes over time.

Process measures are the criteria most often used by the medical profession to measure quality of care. However, process measures tend to be biased according to varying organizational approaches to recordkeeping, and because of their focus on the technical management of illness. The value of process in evaluating quality also depends on knowledge about the relationship between certain activities (process) and outcomes.

Overall, the difficulties involved in undertaking quality assessment studies and the problems related to interpreting the findings can be formidable. Although some positive relationships between structure and process have been found, these are neither stable nor reliable.

A further difficulty is the often indeterminate relationship between standard medical procedures and favorable outcomes on health. There are two aspects to this problem. First, it is unclear what percentage of physicians do, in fact, follow currently accepted medical procedures in their practices. Studies have indicated great deviations from optimal practice behavior, especially in ambulatory care. Second, given evidence of large gaps of knowledge of what procedures and treatments are effective for many common conditions, the correlation between standard medical procedures and health outcomes is dubious (25,200). What must be kept in mind, then, is that measures of quality are all far from perfect.

CONTEXT OF QUALITY CONSIDERATIONS

Current Levels of Quality

Empirical studies concerning current levels of quality of medical care are almost all local in scope and limited to segments of care in highly selected population groups. Thus, most of the empirical studies that are available provide only suggestive evidence about the level of quality in the United States as a whole. A few studies, although not national in scope, do pertain either to a large population or to widely dispersed selections of physicians. Furthermore, national data on morbidity, disability, and use of services are available from the Health Interview Survey, and there are international data on mortality. But the closest to national studies on quality of care are analyses of postoperative mortality conducted on national samples of hospitals.

Both Bunker (187) and the staff of the Institutional Differences Study (129) found large differences in postoperative mortality across hospitals in national samples. Even after detailed adjustments for differences in case type, large variations (as much as a factor of 2.5) in mortality rates in hospitals persisted in the Institutional Differences Study (284).

Regardless of size, scope, or population groups, a large number of studies conclude that there are considerable departures from what seem to be reasonable standards of care. Problems have been found both at the one extreme of insufficient provision of technologies and at the other extreme of unnecessary utilization.

Studies of the process of care almost invariably show that the care provided is below the standards used because not all indicated procedures or tests were done. Performance levels in relation to criteria often do not exceed 45 or 55 percent (284).

A number of studies have also documented the provision of unnecessary services and technologies, especially in the areas of surgical services, laboratory procedures, and drugs. Particularly for laboratory tests, studies tend to show a pattern of overuse (284). The studies of the quality of surgery, however, have been criticized for using post hoc criteria, when the appropriate measure should be based on the information available to the surgeon *before* the operation takes place (189,284).

Lastly, the variation in performance among providers has been found to be substantial. Hulka, et al. (125), for example, in their study of internists obtained performance scores ranging from 30 to 80 percent. A similar range is reported by Rhee (225) using data from Payne, et al. (217). Nevertheless, within that variation, systematic differences do appear. In particular, specialists practicing within their own domain consistently get higher scores than general practitioners (see e.g., 26,126,217,218,228,284).

In view of such study results, one possible conclusion is that present levels of quality of care are quite low. An alternate response, however, is to question the validity of the standards used in assessing quality. As previously discussed, there is often an indeterminate relationship between standard medical procedures and favorable outcomes on health. It is also true that much of technology use in medical care is not fully established by rigorous research.

The presence of health insurance coverage mechanisms is another important consideration. If insurance creates a divergence between individual costs and social costs, there will be a disparity between individual preference levels and social levels of optimal quality. The disparity arises because sick people and their providers consider individual benefits of technologies but are insulated by insurance coverage from the costs of technology use. The result, from a social perspective, is a misallocation of resources toward a more costly distribution of technologies (see chs. 2 and 3).

These incentives toward overuse of technologies are reflected in existing quality assurance mechanisms. The Professional Standards Review Organizations, Blue Cross/Blue Shield's Medical Necessity Program, and Medicare coverage policies toward new technologies, for example, promote quality (though not explicitly in the case of Medicare coverage policy) through utilization review. While studies document the existence of insufficient provision of services in some areas of care, concern with the current system is clearly weighted toward the issue of unnecessary use.

Intended Levels of Quality

Proponents of greater competition agree that quality of care is a priority issue. Procompetitive proposals attempt to aline individual preferences and costs more closely with social preferences and costs. Almost by definition, such convergence is professed to assure and improve quality. Enthoven (79) states simply that "the best quality of care reflects society's preferences in the use of resources." Feldstein (87) is even more terse in stating that, at least in regard to hospitals, "quality is assumed to be a function of the real resources consumed." Quality is to be secured through the inherent workings of market forces that encourage consumers to select the level and type of insurance plan or medical technology which represents the optimal tradeoff, from the point of view of the consumer, between benefits and costs.

Competitive proposals emphasizing patient cost sharing at the time of use intend to encourage the *consumer,* and perhaps the provider acting in the economic interest of the consumer, to consider the cost effectiveness of a particular service or technology. The belief is that if patients have to pay more of the out-of-pocket price to receive care, they will be more reluctant to purchase services which they perceive to be of little efficacy. Hence, the intent is to improve care through reduced use of unnecessary and marginally useful services, by working through consumer incentives.

In contrast, those proposals emphasizing competition among comprehensive care organizations leading to increased enrollment in health maintenance organizations (HMOs) intend to encourage the *provider* to consider the cost effectiveness of a particular service. In changing the manner in which a provider is paid from a services- to a time-based system, the direct monetary incentive to provide more services is eliminated. Again, the intention is improvement in quality through reduced utilization of unnecessary and marginally useful services (see chs. 2 and 3).

One concern that both strategies to increase competition address directly is the issue of underinsurance. To guard against underinsurance, mechanisms such as comprehensive care packages and catastrophic coverage are specified. One of their purposes is to avoid a situation where a person will not seek needed care or will suffer financial hardship as a result of not having sufficient insurance. In that sense, these are explicit provisions designed to assure that initiation and continuation of care are not hindered too much. Given the possible effects of initiation and continuation, these provisions have important implications for quality.

Some of the proposals contain another more or less explicit intention that private insurance companies will be put in a position of competing with one another. In order to compete successfully, companies will impose stricter controls on providers to limit expenditures and keep premiums at competitive levels. Results could include a focus on rooting out unnecessary care, not covering certain services believed to be of no benefit to patients, or even the institution of formal monitoring of care.

Other proposals also intend a similar "second-layer" arrangement of administrative control to assure certain levels of quality care. Some of the proposals indicate that a qualified plan will have to meet specified "performance standards" including some that relate to providers (77). McClure (170) favors imposing quality assurance mechanisms on competing health care plans, as long as other providers are also subject to those mechanisms.

Although competition-promoting proposals do not envisage doing away with the apparatus in place now to assure and promote quality of care, increased price competition under some of the proposals may lead to a shift in the overriding regulatory focus from a concern over unnecessary utilization to a concern over underprovision and omissions of useful services and technologies.

RESEARCH ON QUALITY OF CARE WITH GREATER PATIENT COST SHARING

Increased cost sharing by patients clearly reduces the use of medical care (see ch. 3). The issues for quality, more specifically, are how patterns of use change, what mix of patients are affected, and whether or not the resulting quality of care is altered.

Initiation of Care

One way a reduction in use of technology may come about is through reduced initiation of care. It is useful to distinguish at least two different effects related to initiation: delay by consumers in seeking care, and failure to seek care despite a recognized need—the extreme case of delaying initiation.

There is strong evidence that greater cost sharing deters people from initiating care. The most recent evidence available on these issues comes from interim results of the Rand Health Insurance Study (192). This randomized experimental study of people under 62 years found that the likelihood of having a physician visit or hospital admission, as well as the number of visits per person, were lower with higher coinsurance rates. The Rand researchers are still analyzing data on health status. They have not yet examined whether less contact with providers or fewer visits and admissions had any detrimental effects on health (see ch. 3).

As one would expect, when *necessary* care is delayed, or not sought at all, quality of care may be lowered by leading to some combination of fewer effective kinds of care, greater patient anxiety, increased likelihood of complications, chronic problems, extended discomfort and activity limitation, or even death (251). If and when a patient does seek care, the use of technologies may be greater or less efficient because of the patient's worsened condition.

It is not clear, however, that cost sharing delays "necessary" care. People who had to pay higher copayments under the California Medi-Cal program reported no deterrent in seeking care for "significant conditions" (24). One investigator questioned the extent to which more ambulatory care discovers new disease or controls disease already diagnosed (37). A study of people with congestive heart failure found intensive followup reduced subsequent hospital days for that condition, but was associated with an even larger increase in days for other cardiac and noncardiac disease (37). Similar results were reported for rheumatoid arthritis (37).

Procompetitive proposals advocate relating cost sharing to family income. It is instructive to review the results when cost sharing has been introduced without any attempt to make out-of-pocket expenses proportional to income. When Saskatchewan, in 1968, levied a copayment on physician office and home visits, the effect fell disproportionately on its low-income population. Use of physician services among poor families decreased by 18 percent compared with a decrease of 6 percent for all families (15).

Similar results were found following a 25 percent coinsurance charge in 1967 on all physician services in a Stanford University fee-for-service group in Palo Alto, Calif (240). Following the implementation of that coinsurance, per capita number of physician services fell 24 percent. While a decline among all age, sex, and occupation groups was experienced, physician use fell more for the occupation group with the lowest income. There were also greater decreases in the use of preventive services—particularly annual physical examinations—than in therapeutic care. Within therapeutic care, there was a greater reduction in visits for "possibly minor complaints" (earache, colds, headaches, etc.) than in visits for other services (240).

In a followup study, 4 years after coinsurance had been initiated, the effect of the coinsurance was found to have not been transitory; the drop in physician services remained constant (238). Four years following the introduction of coinsurance, the enrollment of the lower income employees belonging to the plan dropped from one-third to about one-quarter of the total enrollment. These employees chose to join Kaiser, a prepaid group plan requiring minimal coinsurance and lower premiums (see ch. 3).

Although neither the Stanford nor Saskatchewan study correlated reductions in physician visits with a reduction in necessary care, another study on cost sharing revealed a more direct effect on quality of care. In 1972-73, the State of California conducted an experiment on copayment in the California Medi-Cal (Medicaid) program (24). People eligible for Medi-Cal whose earnings or assets exceeded a certain amount were required to pay $1.00 for each of their first two visits to providers each month and $0.50 for each of the first two prescriptions filled each month. Among recipients of Aid to Families With Dependent Children, copayers' utilization rates were 45 percent lower for childhood immunizations, 22 percent lower for Pap smears, and 58 percent lower for "total obstetrical care." This study did not resolve the extent to which differences in Pap smears and obstetrical care could be explained by different rates of pregnancy or different proportions of women in the copay and noncopay groups. Women in the copay group had higher rates of regular care during pregnancy and about the same rate of "preventive services" as women in the noncopay group.

If people in a community turn to providers for care that is not needed, and if the reductions in care are confined to this category of "frivolous" use of services, then the effects on quality might actually be positive ones. Similarly, if the care provided in a community tends to do more harm than good, then restricting access to such care may improve rather than harm quality.

There is substantial evidence that the present use of certain technologies is not related to need. Regional variations of surgery within the Rochester, N.Y., area, and between the United States and Great Britain are examples (29,148).

More recently, the use of several common medical practices (such as tonsillectomies, hysterectomies, prostatectomies, and lens extractions) were found to vary substantially among New England community populations, despite the absence of any measurable difference in their need for services (276). Watkins (272) has also documented the wide variation in appendectomies across communities and across national populations of Australia, the United Kingdom, China, and the United States, again without corresponding variation in patterns of need. Similar variations have been found in the use of the laboratory procedures, antibiotics, and injections (151,153).

Selection of Providers

Another consideration for quality of care under the option of greater coinsurance and deductibles is increased shopping for a provider. The choice of the initial provider will be a consumer decision, while that of referral to providers will likely require a joint decision by consumer and provider. In theory, it should be rewarding for consumers to shop for providers using price as a key criterion, since variability in prices among providers is a well-documented phenomenon (223).

To the extent that shopping does take place, consumers may find providers who are at least as qualified as those the consumers would have otherwise used, but whose prices are lower. However, as previously discussed, a consumer's evaluation of a provider's quality could possibly take the technical quality more or less for granted and focus on the interpersonal aspects of quality that the consumer can more readily judge. Unless technical quality is somehow vouched for by some third party, shopping based only on price with technical quality largely left out may result in lowered quality of care. On the other hand, an argument could also be made that just as hospitals have competed for physicians through acquisition of the most modern and sophisticated medical technology, a parallel dynamic could emerge between provider and consumer. This may be an area, too, where consumer advocacy could surface.

Another possibility is that consumers could turn to altogether different providers who were less expensive or who, like pharmacists, did not charge for advice. If the care these providers offer is not technically on a par with that of physicians, the quality of care may be reduced. There is long-standing evidence that some people, especially those with lower incomes, use pharmacists in situations where they would otherwise (if it were not for problems of cost and access) see physicians (142). When such people are given better coverage for physician services, as with the introduction of universal health insurance in Quebec, they in fact decrease markedly their use of pharmacists for consultations about medical problems (226).

Quality may also be improved if less expensive professionals, such as midwives and nurse practitioners, are as technically proficient as physicians in certain areas and more proficient in interpersonal aspects. Provider shopping may increase incentives for a more creative mix of personnel substitution for physicians that would not lower prices or necessarily sacrifice quality. Recent studies suggest there can be substantial cost savings, at least in the short run, from personnel substitution. Reinhardt (223), Robyn and Hadley (229), and others find that the use of more support personnel in doctors' offices can reduce the cost of physicians' services; Douglas and Cole (73) and Feldstein (90) come to the same conclusion for dentists (62). The use of nurse practitioners and physician assistants in organized delivery systems has also increased productivity and reduced cost (149).

Choice of Technologies

An intended effect of proposed greater cost sharing that is closely related to choice of provider is to induce the consumer to choose technologies more efficiently. This decision is made jointly by consumer and provider. Since it is subsequent to initiation of care, the decision about choice of services is strongly influenced by the prior decision about choice of provider. For most providers, especially those in fee-for-service practice, essentially the same incentives would continue. Any significant changes in incentives would mostly come from the patient side.

The more favorable quality implication is that patients' greater cost sensitivity about choice of services may force providers into increasing clinical efficiency, which would maintain or even improve levels of care. Recent studies have pointed to the possibility for more widespread implementation of such efficiencies. Luft, et al. (162), studied 12 surgical procedures of varying complexity in 1,498 hospitals to determine the relation beween a hospital's surgical volume and surgical mortality. The results indicated a favorable relation between volume and mortality in several instances, implying the value of regionalization for certain operations.

It may be, however, that volume is a natural consequence of high performance and quality standards originally established by individual clinicians or hospitals, not the other way around. Levels of quality under such circumstances would not necessarily be affected by regionalization. Reinforcing the value of regionalization, Farber, et al. (83), found that hospitals performing relatively little surgery in seven procedural areas reported higher incidences of postoperative wound infections.

Greater cost sensitivity may also lead to a different choice of services that results in greater levels of consumer satisfaction. Patient preferences for treatment outcomes can differ substantially from the preferences of their physicians. It may well be that, in many situations, the clinical outcomes valued by physicians are less important to patients.

A negative possibility of greater choice of services is that consumers may demand more services than before, especially services covered as catastrophic expenses. This could have negative effects in one of two ways: by lowering quality with respect to interpersonal aspects if the consumers demands increase tension between provider and consumer, or by lowering technical care if the demands for more services result in provision of unnecessary care.

Under greater cost sharing, catastrophic coverage would remove the restraints on the provider when large expenditures have already been made. If the provider then used additional services, the effect on quality would be indeterminate. The extra care might improve the patient's condition, have little or no net benefit, or produce harm. The provision of catastrophic coverage would not change the situation regarding alternative delivery systems such as HMOs. They already have such coverage and rely on the organization to restrain use.

As for coverage of comprehensive care, HMOs also now provide such benefits. For other practices, quality could be either improved or unaffected as providers and consumers choose the setting and type of care for a medical condition without the constraint of insurance coverage. For example, present coverage of a procedure in a hospital but not on an ambulatory basis might lead to hospitalization, with the greater risks associated, when ambulatory care would be appropriate.

Equity Considerations

The effects of greater cost-sharing provisions on use of technologies seem strongly related to income (66,159,240). Lower income persons are more likely not to initiate care, to delay initiation, and to reject services—all with potentially negative implications for quality of care. Recognizing these implications, the procompetitive proposals relate cost-sharing levels to income. Ginsburg (105) has argued, though, that in order to relate these levels to income, private insurance companies would have to measure a person's income both at the time the premium is set and at the time of claim; this task is not possible under current statutes protecting privacy and would also pose large administrative costs. An alternative to such problems would be linkage with information from the Internal Revenue Service.

If income-related cost-sharing levels can be put in place, their effects on low-income persons who choose such coverage are not easily predicted, especially for Medicaid beneficiaries. Medicaid coverage differs from one State to another, now more than ever before. In most States there are no cost-sharing provisions, but access to care can still be severely restricted by the definition of the services covered. All that can be said is that in States with relatively comprehensive coverage, cost-sharing provisions are likely to affect initiation and continuation in ways that are analogous to those discussed earlier for the insured population, and with similar implications for quality of care. In States with very restricted coverage, any adverse effects on quality resulting from the inhibiting effects of cost sharing may be compensated for by the kind of broader coverage envisioned in procompetitive proposals.

One group for whom the potential benefits are less ambiguous are people under age 65 who have no public or private insurance coverage. Estimates of the size of this group range from 23 million to 25.6 million people (33,135). For these people, any insurance, even with cost-sharing features, would facilitate access to care, and thus might contribute to the quality of care they receive.

If, on the other hand, cost-sharing levels are not or cannot be set in relation to income, then the effects on the quality of care received by lower income persons can be expected to be in the same general direction as for other income groups, but with differences in magnitude. For individuals who are covered or could be covered by Medicaid, access and therefore quality would be more apt to be reduced. For other individuals, there would still be improvements in quality because of increased access to care, but the benefit would be lower. Most importantly, among those who already have coverage, the effects on quality would be distributed inequitably across income classes, with lower income people being more apt to forego necessary care than those in the higher income brackets.

The effects of cost sharing on Medicare beneficiaries are likely to be similar to those described earlier for the insured population, inasmuch as Medicare Part A (for institutional services) and Part B (for physician services) provisions resemble those of a standard health insurance policy (284).

RESEARCH ON QUALITY OF CARE WITH COMPETITION AMONG COMPREHENSIVE CARE ORGANIZATIONS

Proposals for greater competition among comprehensive care organizations envision greater choice of health plans, and greater enrollment in prepaid group practices is perceived as especially desirable. Again, effects on quality of care can be examined in terms of initiation of care, selection of provider, and choice of technologies.

initiation of Care

In HMOs, the financial barriers to initiation of care represented by cost sharing are not great. Furthermore, one of the traditionally distinctive features of HMOs is the comprehensiveness of the services covered, which should further facilitate initiation of care. Surveys of HMO enrollees indicate that the scope of benefits available, such as complete ambulatory care, maternity care, mental health/drug abuse services, and preventive care, is one of the most attractive aspects of HMOs (159,254).

However, there may be other barriers to initiation of care in HMOs. One way HMOs, and especially prepaid groups, achieve lower costs is by limiting the supply of beds as well as physicians, thus constraining demand (222). The restricted supply of services is rationed not through money prices but through waiting times to obtain an appointment and, because of centralization of services, through travel distances to clinics.

Enrollees in prepaid groups wait a shorter time in the physician's office, but a longer time for appointments (159). No difference has been found between the time to obtain an appointment for prepaid and fee-for-service group practices (119). Other measures of access (e.g., home visits, ability to reach a physician by telephone) have been investigated, but the findings do not distinguish between HMOs and fee-for-service solo practices on these dimensions (58,159).

Almost all prepaid groups have provisions for providing care without an appointment's being required, such as walk-in clinics and emergency rooms. Their central recordkeeping also promotes continuity of care. Such integration could reduce unnecessary duplication of tests and examinations, which are not only inefficient but can have adverse effects on health. Overall, initiation and continuation of care may be enhanced, resulting in higher levels of technical quality.

Selection of Providers

Another aspect of quality that might be affected by enrolling in an HMO is the selection of the provider. In HMOs, the selection is constrained to a finite set of providers, namely those who are members of the prepaid group or the individual practice association (IPA). Thus, for all practical purposes the choice of an HMO as one's health insurance plan to a large extent determines—or at least largely constrains—the choice of provider. However, the IPA by its nature is apt to offer a choice of physicians that can be quite broad compared with the prepaid group.

But those in favor of group practice dispute that consumers' free choice of physicians is good in itself or is correlated with desirable health outcomes. In a solo setting, consumers have little knowledge or control over the providers of care (40,111). They rely mainly on a lay referral system for choosing physicians on the basis of recommendations of friends and neighbors (93). Patients in a group practice can often select physicians among those available and change if they wish. Most important, the group can guide the patient's choice on knowledgeable grounds (40). Furthermore, beyond having the knowledge to help consumers select physicians, group providers have a professional interest in selection of well-qualified colleagues.

The most telling and persistent criticism of the group practice framework is that it depersonalizes patients in their dealings with a provider and with the medical care system itself. This relates to process as it concerns the way care is delivered and may adversely affect health outcomes. It can also concern outcomes directly, since emotional well-being is a part of health.

Two studies of consumer satisfaction with quality of care produced findings that HMO enrollees were more negative about the quality of care they received than were patients of fee-for-service physicians (154,159). It is uncertain which characteristics of medical practice consumers evaluated as indicators of quality, but such a perception may stem from consumers' heavier emphasis on the interpersonal component of care. Studies of the interpersonal aspects of care report that prepaid group patients were less satisfied with the warmth, attention, and caring attitudes shown by physicians than the patients of fee-for-service physicians (159).

Choice of Technologies

One consistent finding in the literature is that enrollees of prepaid groups use many fewer hospital days than the general population (see ch. 3). To the extent that this represents the elimination of unnecessary care or an appropriate substitution of outpatient care for inpatient services, it represents an improvement in quality along with a reduction in costs—the kind of ideal combination that some of the advocates of this strategy wish to achieve (78).

As noted in chapter 3, this decrease in hospitalization occurred in both medical and surgical categories, although reported rates of surgery were generally far lower among HMO patients than among comparable control groups. The Federal Employees Health Benefits Program's (FEHBP's) experience showed consistently lowered hospitalization rates by members electing HMO coverage (see app. C). Such rates were particularly striking for "elective surgical admissions," estimated at 20 to 25 percent below fee-for-service plans (37). None of the reviewers of the literature on HMOs have concluded that reduced hospitalization rates meant the delivery of better quality care (37,70,231).

There has always been some concern that prepaid group practices may be achieving lower hospitalization rates by not always admitting patients to the hospital and by not performing surgery when indicated. No evidence to that effect exists. One study, which compared a Seattle prepaid group practice and an independent fee-for-service practice, raised the possibility that the prepaid group might have provided too little appropriate surgery (152). But the different rates were attributable mainly to tonsillectomy and adenoidectomy, two procedures whose efficacy is controversial. Luft maintained that there is no evidence that "skimping" by HMOs has occurred anywhere "but in the unique situation of the Medi-Cal Prepaid Health Plans in southern California during the early 1970's" (155) (see app. E).

HMOs v. Traditional Fee-For-Service Practice

When choosing an HMO as one's health insurance plan, the question that arises is whether the quality of care provided in HMOs differs from the quality of care provided in the fee-for-service sector. This is a question that has been addressed more or less directly by dozens of studies and by the previous discussions in this chapter. It has also been the subject of two recent major reviews of the literature, in particular, those by Cunningham and Williamson (54) and Luft (159).

Cunningham and Williamson reviewed 27 separate studies (17 independent research projects) and concluded that 19 of these studies found that the general quality of health care in the HMOs studied was superior to that in general fee-for-service or other settings (54). In all 19 cases, the HMOs were prepaid group practices. In eight of the studies, either the quality of care was found to be similar in both settings, or the total study findings were inconclusive. Two of these concerned Medicaid recipients in IPAs, and one studied Medicaid recipients in both IPAs and prepaid groups. The other five in this inconclusive category reported on prepaid group practices. None of these studies reported HMO care to be inferior overall. A total of 80 independent measurements, reflecting the study's criteria of valid quality indicators, that assessed specific aspects of care in these studies generally supported these overall findings (see table 6).

Table 6.—Comparison of Quality of Care in HMOs and Other Settings: Scoring by Structure, Process, and Outcome Indicators

	Superior care in HMOs	Comparable care or inconclusive data: HMOs and others	Inferior care in HMOs
Separate indicators			
Structure	4	1	0
Process	41	11	6
Outcome	8	7	2
Total	53	19	8
Overall studies			
Total	19	8	0

NOTE: These scores were based on measures reflecting each study's indicators of quality of care.

SOURCE: F. C. Cunningham, and J. W. Williamson, "How Does Quality of Health Care in HMOs Compare to That in Other Settings? An Analytic Literature Review: 1958 to 1979?" *The Group Health Journal* 1:4, 1980.

Of the eight instances of inferior care, two were measures of continuity of care where use of team care in the HMO was not fully taken into account (17,122), and two were satisfaction measures (55, 99) where members of prepaid groups were less satisfied than fee-for-service recipients with their physicians but more satisfied with technical quality and other health personnel. One indicated provision of fewer preventive services in HMO settings (101), and one indicated poorer outcomes for hypertensive patients (245). The remaining two findings in this category related to perceived access to care (245) and physician rating for appropriate length of hospital stay (217).

Reviewing many of the same studies and also grouping quality assessment measures under the headings of structure, process, and outcome, Luft came to no definite resolution about the quality question of HMO v. fee-for-service care (159). The available structural data generally supported the contention that prepaid groups are at least as good as the conventional system. Prepaid groups tend to have higher proportions of more educated (board-certified) physicians and are more likely to use accredited hospitals. However, some have had problems gaining access to certain hospitals and others have chosen not to emphasize specialist and accredited nonprofit hospitals. In the only such study of an IPA, qualified surgeons performed more of the surgery at the IPA than in fee-for-service practice. Internal quality review mechanisms were found in HMOs of both types, but the effectiveness of these internal measures was not clear.

Process measures of the review indicated that large multispecialty group practices, both capitation and fee-for-service, have a quality advantage over small groups and solo practitioners. Outcome measures for HMOs were not generally found to be different from those of conventional practice. An exception is an early study (244) that showed that enrollees of the Health Insurance Plan of New York, an ambulatory capitation group, had lower rates of prematurity and perinatal mortality than a control population served by fee-for-service medicine. In another earlier study, the National Commission on Health Manpower concluded that the quality of care delivered by the Kaiser-Permanente prepaid groups in California was equal to or better than the care in most communities (224).

Equity Considerations

This strategy to increase competition among comprehensive organizations seeks to encourage enrollment in organizations similar to present prepaid group practices. The history of HMOs serving Medicaid and Medicare populations suggests that this arrangement is not without its difficulties. Less than 2 percent of Medicare beneficiaries and a similar percentage of Medicaid eligibles are enrolled in HMOs. HMOs usually market to employment groups, which tend to have fewer elderly or chronically ill people than the general population. With capitation payment and community rating, HMOs have an incentive to avoid high or otherwise expensive users of medical care. The proposal to relate premiums to actuarial categories would mitigate that effect (79), but not eliminate it. The incompatibility of the retrospective payment methods of Medicaid and Medicare with HMOs' capitation and the uncertain length of Medicaid eligibility payment have also deterred enrollment of these groups (see ch. 3).

Some improvement might be expected in the quality of care received by Medicaid recipients who would enroll in HMOs because of accessibility and the comprehensive nature of the benefit package. However, the problems that arose with the Prepaid Health Plans in California indicate the importance of minimum standards or qualifications for such plans (see app. E).

LIKELY EFFECTS OF INCREASED COMPETITION ON QUALITY OF CARE

Greater Patient Cost Sharing

Higher levels of cost sharing by patients can be expected to lead to use of fewer technologies, especially in situations involving laboratory tests and drugs, illnesses of a potentially minor nature, and certain groups of surgery. The use of technologies in such situations has exhibited a great deal of variation, often unrelated to medical condition. To the extent that specific technologies are of little or no real benefit in these situations, changes in coverage provisions will not appreciably alter the outcome or the length of the condition. Barriers to initiation of care may also be offset by increases in clinical and production efficiencies by providers. Under such circumstances, levels of quality of care will be maintained if not improved.

To the extent that necessary care—care for which medical intervention can alter the course of the disease and affect other outcomes—is eliminated, however, quality of care is bound to suffer. For technologies such as immunizations, whose efficacy has been well established, some harm to quality can be expected with any decline in their use. Relating cost sharing to income would be necessary to avoid pronounced declines in access and quality with regard to such necessary services for low-income and Medicaid populations. The coverage of catastrophic expenses is also designed to prevent people from foregoing needed care because of finances. But people with chronic conditions and recurrent annual expenses up to the threshold might find medical expenses of 10 percent of their income to be prohibitive over several years.

At the same time, if catastrophic coverage promotes the use of technologies of questionable benefit to the patient, levels of quality may be diminished. A final concern with increased levels of cost sharing is that cost-conscious consumers shopping for less expensive services may unintentionally receive care of lower technical quality, a critical aspect of care not always appreciated by the consumer.

Competition Among Comprehensive Care Organizations

If consumers respond as at least some of the competition proposals intend for them to, substantial numbers will enroll in HMOs. The available evidence suggests that they will receive technical care that is of quality at least comparable to that available in the fee-for-service sector, although they may be more dissatisfied with the interpersonal aspects of care. This result stems from the more rigid organization that is characteristic of HMOs, especially prepaid groups.

Present medical practice allows much room for changes in the number and mix of technologies used, with little effect on or improvement in quality of care. The intention of creating a more cost-sensitive environment is that incentives would be changed and all providers would feel pressures to be efficient. In this different situation, there might be a tendency for providers to lower quality to cut costs. The likelihood of lowered levels of quality might be especially pronounced in group practices with large concentrations of low-income and Medicaid patients.

In addition, HMOs studied in the last 20 years are not necessarily the type that would proliferate in response to competition. The organizations that fit under the rubric of HMO and alternative delivery systems are generally becoming more varied. Many of the best studied prepaid groups (Kaiser-Permanente, Health Insurance Plan of New York, Group Health Association, Group Health Cooperative of Puget Sound) have a history of sponsorship and organization that make them unlikely to provide complete insight into any of the IPAs that have multiplied in recent years. Those IPAs often represent attempts by private practitioners to compete with an existing prepaid group. The strictures imposed by capitation payment are shared by both types of organizations, but the goals, incentives, and sponsorship, which are likely to affect many aspects in quality of care, are apt to be quite different, and relatively less is known about IPAs altogether.

IMPLICATIONS FOR POLICY

Examination of the likely effects on quality of care of competitive proposals suggests the importance of better information about quality, where quality is used to mean both the benefits from care and the competence of those who deliver it. For the majority of technologies, the influence of these proposals on quality remains speculative, in large part because of the lack of good information on what constitutes good and necessary care.

As previous OTA reports (200,201,208) have testified, available information about the benefits of care has much room for improvement. Pauly (214) states in an article on unnecessary surgery that medicine has not generated "either the conceptual apparatus or the complete information set needed to arrive" at a general consensus on which procedures are necessary and which are not. Likewise, many new and emerging technologies have been documented to enjoy widespread use without accompanying information regarding appropriate use (200,208). Information about the competence of providers is also very scarce. Even when information is available, it may not reach the provider or consumer who needs it.

The problem of the lack of information about the benefits of specific care that exists under the current system of medical care will probably continue to exist under any new procompetitive system. However, the uses and focus of information about quality might change, depending on the competitive proposal and the direction of the concern regarding quality.

With increased patient cost sharing, the concern about providers' use would remain in the direction of overprovision. With present payment methods, providers would have no obvious incentive to underuse technologies and might overuse them in the catastrophic area. Information could be directed to consumers about appropriate circumstances for initiating care, provider quality, and the benefits of some procedures.

In contrast to the present system, which is believed to encourage unnecessary utilization, the competitive strategy that emphasizes comprehensive care organizations would shift the focus of concern about quality to the underprovision and omission of useful technologies. Quality assurance measures here could take the form of information about the quality of the provider group, as well as direct quality checks on providers themselves.

The experience of the California Prepaid Health Plans provides an instructive lesson about the levels of poor quality possible with greater plan competition and increased enrollment into alternative delivery systems (see app. E). As a result of that situation, legislation was passed to prevent similar abuses in the future. Certain marketing practices were prohibited. Direct quality checks on providers were made through provisions of minimum benefit packages (as established through Federal HMO legislation), and through improved performance standards. Broad requirements were established for disclosure by plan officials of ownership interests and reimbursements (see app. I).

Federal legislation has also since established that Medicaid and Medicare beneficiaries must constitute a minority of enrollees in such plans. The intent has been to assure that these beneficiaries participate in mainstream medical care as well as to allow non-Federal beneficiaries to help monitor a plan. In addition, there is sufficient experience with poor and aged people in prepaid groups to indicate that the problems with Prepaid Health Plans in California were not typical of that organizational form (see apps. C and D).

A number of possible mechanisms should be considered for quality assurance activities with the advent of greater price competition. One possibility is a more decentralized approach through individual providers and insurers. Physicians, other professional providers, and third-party payers could impose stricter quality controls both through professional standards and the generation of information concerning quality of care. Blue Cross/Blue Shield and the American College of Physicians are already cooperating in an effort to identify procedures and services believed to be of no benefit to patients (208). A more formal alternative would be to institute direct monitoring of care, tied into the payment mechanism for greater effectiveness.

Another possible approach for quality assurance would be mechanisms that are part of a national network in the mold of Professional Standards Review Organizations (PSROs) and Health Systems Agencies (HSAs). A more centralized network of PSRO- or HSA-like organizations would have the advantage of providing some uniformity of procedure and standards, but at the same time might introduce some rigidities.

PSROs are community-based nonprofit agencies directed by physicians that monitor the quality and appropriateness of institutional health care provided to Medicare and Medicaid beneficiaries. The main virtue of PSROs is that they are already in place, are functioning, and have some involvement in quality assurance. Their main emphasis to date, however, has been on inpatient utilization review. In a competitive environment, utilization review is unlikely to be of great concern, except in cases where catastrophic coverage is involved. Therefore, PSROs would need to shift their focus, emphasizing much more quality assurance functions (i.e., assurance against underuse of necessary services) than they do now and paying less attention to utilization review.

HSAs, in contrast, are charged with developing local health planning goals and implementing plans in consonance with State and National health care goals. Like PSROs, HSAs represent a functioning infrastructure with established methods of information collection, analysis, and dissemination. HSAs could also act as a focal point or clearinghouse for standardized (comparative) information on the technical aspects of quality of care among providers and various services in the local health care delivery system. The Northern Virginia HSA, for example, has demonstrated the feasibility of generating such information (see app. G). HSAs could also act as advocates and brokers for the less sophisticated health consumer such as the poor and the elderly, in a manner analagous to the Project Health organization in Multnomah County, Oreg. (see app. D).

Neither HSAs or PSROs, however, have lived up to expectations or their potential in the past. Part of the problem has been the lack of evaluative information about technologies that was noted above. Despite a 1979 mandate for HSAs to foster competition between providers and plans, few HSAs seem to have revamped their activities in that direction, and the certificate-of-need process is seen as entrenching established providers (79) (see app. G). Although a focal point for assessing and assuring quality of care is indicated under greater price competition, its appropriate location is not clear.

5.

Consumer Information Under Increased Competition

For the general run of consumer goods, the buyer is necessarily an amateur while the seller is a professional.

—*Joan Robinson*
The Economics of Imperfect Competition

Contents

Page
Consumer Decisions in the Present Context 71
  Selection of Health Insurance Plans 71
  Patient Initiation of Care and Selection of Technologies 72
Information Required Under Increased Competition 73
  Selection of Health Insurance Plans 73
  Initiation of Care 75
  Selection of Providers and Technologies 75
Availability of Consumer Information 76
  Current Sources of Information 76
  Deterrents to Providing Consumer Information and Some Exceptions 76
  Methodological Problems of Developing Information 78
Implications for Policy 78
  Private Sector Provision of Information Under Increased Competition 78
  Role of the Public Sector Under Increased Competition 79

List of Tables

Table No. *Page*
7. Information Needed by Consumers for Decisions Under Increased Competition 74

5.

Consumer Information Under Increased Competition

A common desire of proponents of increased competition is that consumer preferences guide the delivery of medical care. In an environment of competition among comprehensive care organizations, consumer choice could be exercised through selection of a health plan in which to enroll. In an environment with greater patient cost sharing, consumers could decide whether or not to seek medical care and then which providers and technologies to use. For medical care as for other services, consumers consider both cost and quality when making such decisions. If the cost of one health plan or technology were lower than others, a person would weigh the benefits along with the costs of each in choosing among them.

Evaluation of medical technologies currently has many deficiencies. As previous OTA reports have pointed out, information about new and existing technologies is not systematically developed (200,201,208). Even medical experts often lack the knowledge required to compare alternative technologies. The information that is developed may not be disseminated in such a way that it reaches the providers and consumers who could use it. The quality of care now delivered is also far from perfect. Although quality is difficult to measure and evaluate, it is clear that deficiencies now exist and that improvement is possible (see ch. 4).

Information about alternative medical technologies will continue to pose problems. The specific concern of this chapter is not with the entire problem of information, but with the changes that might occur if greater price competition were introduced. Would the information needs of consumers differ under greater cost sharing or greater plan competition? How much of that requisite information is currently available and what would a more competitive environment be likely to generate? Different incentives to develop information and the methodological problems of doing so are analyzed. The final sections of the chapter summarize the changes that are likely to take place and discuss private and public sector approaches to the problem areas that have been identified.

CONSUMER DECISIONS IN THE PRESENT CONTEXT

Selection of Health Insurance Plans

Although the vast majority of people in the United States have health insurance, relatively few are presented with a choice among plans. In 1977, almost 90 percent of U.S. workers had employment-based group health insurance, but only 18 percent (11 million) were offered a multiple choice of plans (84,253). The common practice is that an employer or union develops an insurance package, which is then offered to employees. The Health Maintenance Organization Act (Public Law 93-222) requires employers with 25 or more employees that provide health insurance to offer a federally qualified health maintenance organization (HMO) if there is one in the area. Of employees who had options, 7 million (11 percent of all workers) had an HMO as one of their options. The implication of these statistics is that choice of coverage is greater because of that legislation (84).

Medicare beneficiaries—people aged 65 or older, disabled people, or end-stage renal disease patients—have some limited options. They can elect coverage under Part A (institutional services) and/or Part B (physician services) with the benefit coverage determined by Federal legislation and regulation. About two-thirds of Medicare beneficiaries also purchase supplementary private insurance (see app. F). Only about 2 percent are enrolled in HMOs.[1]

Medicaid eligibles usually have little or no choice among health plans. Although the Federal Government requires certain minimum benefits and minimal patient cost sharing, the States have some discretion to set benefits, eligibility, and payment for providers. Less than 2 percent of Medicaid eligibles belong to HMOs (61). The uncertain length of Medicaid eligibility conflicts with HMOs' commitment to provide medical care for a specified period, and the dispersion of people eligible for Medicaid makes marketing difficult.

Across all age groups, an estimated 26.6 million people representing 2.6 percent of the civilian noninstitutionalized population, had no public or private health insurance coverage in 1977 (135). Lack of coverage is highest among young adults, nonwhites, and people in rural areas. In the families of uninsured people, 43 percent of the other family members had no insurance (135). About 8 percent of the employed lack health insurance coverage, mostly people working in companies with low wages, on a part-time or self-employed basis, in seasonal employment, or in companies with health insurance policies that have waiting periods (49).

Consumers have limited understanding of many aspects of their insurance, particularly health care expenses, cost of coverage, continuance provisions, and types and scope of benefits (9).

This limited knowledge may be reasonable in the present context, in which people have few choices to make about health insurance coverage. People who have no choice among plans or who do not intend to change their coverage have little use for information about health insurance. In the survey that found a low level of knowledge, 40 percent of the respondents said that existing insurance information was sufficient and only 7 percent wanted more information (9). By contrast HMO enrollees, who have a choice of plans, have consistently been more knowledgeable about their coverage than patients of solo fee-for-service physicians (159).

As one would expect, the more complicated the benefits and cost-sharing provisions, the less accurate is people's knowledge. A survey of consumers in several localities found about 90 percent were accurate about whether or not they had private insurance and coverage for hospitalization and dental care (167). Approximately 80 percent of families with first-dollar coverage for outpatient medical services knew they were covered. But only 50 to 60 percent of the families were aware that outpatient drugs and physician services were covered if a deductible was required. It is noteworthy that people's reports of their share of expenses averaged within 10 percent of the correct answer. Although the study did not correlate consumers' perceptions with the use of services, this finding raises the possibility that people have more of a working knowledge of their coverage than is conveyed by the survey responses.

Patient Initiation of Care and Selection of Technologies

It has long been observed that patients rely on physicians for advice about the use of medical technologies, and this delegation of responsibility has been attributed to the consumer's lack of medical expertise (7).

Although most people clearly do not have the technical knowledge of medical professionals, they do have some knowledge about and take a more active role in determining the use of some kinds of technologies. Through experience, consumers can become reasonably well informed about technologies that they use frequently, such as normal deliveries, most dental caries repair, preventive care, and drugs for common and chronic conditions (211). Pauly estimated that such services may account for 25 percent of all medical expenditures. There are other services, such as appendectomy, that an individual uses rarely but that physicians perform frequently. In addition to their physicians' advice, people may gain considerable knowledge about such technologies from other patients. People are more dependent on physicians for guidance about services that both individuals and physicians use infrequently, such as experimental procedures (63, 211).

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[1] D. N. Use and D. Sawyer, *The Medicare and Medicaid Data Book, 1981. Health Care Financing Program Statistics* (Washington, D.C.: Health Care Financing Administration, Office of Research and Demonstrations, April 1982).

Legal requirements that physicians and other providers be licensed are at least partly intended to compensate for consumers' ignorance by certifying the competence of these professional advisers. Similar limits on patients' use of technology are imposed by requirements that only physicians may prescribe certain drugs or admit patients to hospitals (63).

Despite these practical and legal constraints, people exert substantial influence over the use of technologies. They may delay care or not seek it for self-limiting conditions. If they decide to initiate care, they choose the physicians or organizations to provide it. Patients decide whether or not to comply with the physician's recommendation, such as drug therapy for hypertension. Patients' discussions with physicians may influence physicians' ordering of ancillary technologies and admissions to hospitals. Patients also evaluate the care that they receive and, if dissatisfied, may switch providers. The factors that people use to evaluate their medical care include technical standards but also encompass interpersonal aspects and accessibility (see ch. 4).

INFORMATION REQUIRED UNDER INCREASED COMPETITION

People now routinely make many decisions about insurance coverage and medical care. The intended effect of competitive strategies is to make people more sensitive to costs in the decisions that they make about health plans or medical care. Under increased competition, people would consider the risks and benefits of alternative insurance coverage and medical services as they do now. What would differ is the extent to which cost enters into their decisions.

Would different or supplementary information be needed for the more cost-conscious decisions that people would be expected to make? It is useful to bear in mind that, in theory, not everyone needs full information for a market to function smoothly; a minority of well-informed consumers, whose exact number is left undefined, can influence other consumers and the direction of the market (79,211).

Selection of Health Insurance Plans

For consumers to weigh cost more heavily in selecting coverage requires that such information be available about each plan. This cost information falls into three categories: 1) the annual cost of insurance premiums, 2) the annual out-of-pocket expenses likely for services not paid by the plan, and 3) the sum of these two categories, total expenditures. The information would have to be presented in a standard or understandable way across plans so that people could make comparisons.

Consumers' other information needs would depend on the differences that would exist among plans (see table 7). Although all of the competitive proposals call for comprehensive benefits to be covered, what is included in comprehensive benefits is open to interpretation (see ch. 2). Some of the proponents of greater competition would permit considerable variation among plans (170, 211). Others would have minimum standard benefits clearly defined and required for a plan to qualify for participation (79). All proponents would permit plans to offer optional coverage of services, such as vision care or dental services, that were not included in the comprehensive benefits. Supplementary coverage could also be offered for the out-of-pocket expenses under greater cost sharing. To the extent that the basic or optional benefits varied across plans, meaningful comparisons would require that the differences in coverage and their cost implications be stated.

For health insurance as for other purchases, consumers would consider the different benefits along with the different costs of alternative plans. Some of the different costs might stem from different styles of practice that do not have significant implications for quality of care. Such differences in practice styles might interest consumers

Table 7.—Information Needed by Consumers for Decisions Under Increased Competition

	Type of information needed			
Decision to be made	Costs	Benefit coverage	Quality of care	Technology information
Selection of health insurance plan				
If comprehensive benefits standard:	Premiums, out-of-pocket expenses likely	Benefits covered	Any quality differences that affect health	—
If no basic benefits:	Premiums, out-of-pocket expenses likely	Benefits covered	Any quality differences that affect health	—
For supplementary coverage to basic benefits:	Premiums, out-of-pocket expenses likely	Benefits covered	—	—
Initiation of medical care				
With greater patient cost sharing:	Cost-sharing provisions of insurance, charges likely	Benefits covered	—	Distinction between self-limiting and other medical conditions, appropriate preventive schedule
In comprehensive care organization:	Cost-sharing provisions of plan	Benefits covered	—	Appropriate preventive schedule
Selection of provider or technology				
With greater patient cost sharing:	Cost-sharing provisions of insurance	Benefits covered	Competence of provider	—
In comprehensive care organization:	Cost-sharing provisions of plan	Benefits covered	—	—

SOURCE: Office of Technology Assessment.

but would not be vital for them to know beforehand. If they were dissatisfied, they could switch plans during the next open enrollment period. The experience of satisfied enrollees could spread by word of mouth, and enrollment might rise in plans considered desirable. A similar situation could pertain for some of the dimensions of quality that consumers value, such as interpersonal aspects and accessibility. People could learn from their own experience and that of others and gravitate to the plans that they preferred.

Of primary concern are any differences among plans that would harm patients' health by increasing morbidity or impairing their ability to function or even raising mortality rates. Consumers today face problems in assessing providers' technical standards of quality and minimum levels of competence. Would these problems be changed under increased cost consciousness?

For insurance policies with greater cost sharing, the direction of the concern about *providers'* use of technologies would continue to be with overprovision (see chs. 3 and 4). Providers would have no apparent incentive to recommend too few services and might reduce inappropriate use in an attempt to deliver care at a cost competitive with others. With the same retrospective payment methods (fee-for-service to physicians and charge- or cost-based to hospitals), it is possible that providers collectively would generate additional use to maintain their income levels. Concerns about overprovision arise particularly in the area of catastrophic expenses (see ch. 3).

For the competitive strategy that emphasizes enrollment in comprehensive care organizations, the direction of the concern about *providers'* use would be with underprovision. With a prospective payment per enrollee and standard comprehensive benefits, providers could achieve lower costs by recommending fewer services than appropriate (see ch. 4).

As chapter 4 has discussed in depth, assuring that people receive medical care of acceptable quality will continue to pose problems under increased competition. The different direction of the effects likely under alternative strategies suggests that different emphases would be advisable. The issue that remains is the appropriate role for consumers and other groups. To what extent is it reasonable that consumers inform themselves about the technical quality of care delivered by alternative plans and make enrollment decisions based on that knowledge? And to what extent is it reasonable that the medical community or Government ensure that all plans offer at least acceptable levels of quality?

Initiation of Care

People will also consider the costs and benefits of seeking medical care. To predict the cost, they will require information about their insurance coverage—both the kinds of services covered and any cost-sharing provisions—and about providers' charges for the kind of care being considered.

For enrollees of comprehensive care organizations with minimal cost sharing, cost will provide little deterrent to their initiating care, and benefits will cover most services including preventive ones.

Under greater cost sharing, cost would pose more of a barrier. People in plans with greater cost sharing would need to be better informed about the appropriate circumstances for seeking care so that they did not avoid or delay medical care when to do so would harm their health. They would have to distinguish self-limiting conditions (such as the common cold) from conditions (such as beta hemolytic streptococcus infections) that can have worse consequences (rheumatic fever) if care is delayed.

Most health insurance now excludes preventive technologies. Under greater cost sharing, people would continue to need information about appropriate preventive care, both the kinds of technologies that are effective and the schedule recommended. Then as now, information would be particularly valuable for pediatric and prenatal care. These areas have many effective preventive and therapeutic technologies, and long-term problems for the individuals and for the society can result from their disuse. Vaccines against infectious diseases such as poliomyelitis and measles can prevent crippling, mental retardation, and even death. If untreated, otitis media (middle ear infection) can result in hearing loss or mastoiditis (infection of the mastoid cavity of a skull bone), but antibiotics can prevent those complications.

Selection of Providers and Technologies

Consideration of costs in selecting providers and technologies would also require that consumers know the benefit coverage and cost-sharing provisions of their health insurance, as well as the charges for the alternative providers and technologies.

The cost of particular services would be less important to members of comprehensive care organizations with minimal cost sharing. Once a member has made the decision to seek care, the organization would guide the use of particular providers and technologies.

Under greater cost sharing and more traditional insurance arrangements, consumers would make some of the decisions and rely on physicians to make or guide others. Seeking care may entail the choice of a provider or technology. People with situational mental health problems may choose among psychiatrists, psychologists, or mental health clinics. Selection of a practice for maternity care may involve a choice between an obstetrician or midwife and among hospital admission, do-not-admit hospital care, or birthing center for normal delivery. When a person is under medical care, instances will arise when the patient can influence the provider's decision about admission to hospital or ambulatory care, the use of ancillary tests, or even therapy.

As with the selection of health plans and initiation of care, the concern is that consumers out of ignorance would choose incompetent providers or ineffective technologies for a given medical condition. This problem exists in the current context. Under greater cost sharing, it is possible that more sensitivity to cost would lead consumers to choose care that was less expensive but ineffective or harmful. As with the other choices, the issue is the extent to which consumers can deal with these problems by having more information. And to what extent is it more appropriate for the medical community, other parts of the private sector, or the Government to structure the system or guide consumers' and providers' decisions so that these problems are avoided?

AVAILABILITY OF CONSUMER INFORMATION

Current Sources of Information

Present consumer information about health insurance plans and medical technologies in large measure reflects the kinds of decisions that people make. Most people do not know the costs of their health insurance, as one would expect when they do not bear the full cost and usually have no choice among plans. The charges of individual physicians, hospitals, and other providers are not routinely published. In fact, court decisions have only recently begun to remove restrictions on physicians' advertising (see app. G).

Similarly, there are few comparisons of the benefit coverage and costs of alternative plans. A private third-party payer usually produces one pamphlet for all the coverage options within a plan. With the exception of pamphlets for the elderly, few private insurers target their information to population subgroups. The pamphlets present neither information about out-of-pocket expenses nor clear descriptions of conditions of coverage and scope of benefits.

A recent Blue Cross/Blue Shield booklet for the Federal Employees Health Benefits Program (FEHBP) illustrates common difficulties (175). Maternity benefits, for example, are described in several different sections about hospitalization or physician visits. Scope of coverage and out-of-pocket costs are confusing. Although the booklet states that the plan would pay hospitalization in full, there is a copayment of $25 per day for the first 10 days of each admission. The text refers to reimbursement of usual, customary, and reasonable charges, but provides no specifics about fees. Also unclear are eligibility and coverage for premature infants as well as the procedures and costs of switching plans (175).

People considering a change in health insurance have obtained information from a variety of sources (9). Those under age 62 have drawn information primarily from employers or unions (49 percent), private insurance companies (20 percent), and families (16 percent). People over 62 have relied on Social Security offices (30 percent), friends (25 percent), and private insurance companies (21 percent). For the total population, more people received information through personal contacts (23 percent) and booklets (20 percent) than through any other media.

Deterrents to Providing Consumer Information and Some Exceptions

The dearth of consumer information about health insurance plans and medical technologies reflects characteristics of the present medical care system, the nature of information in general, and restrictions on providing information.

With the limited choices now available, most people would have no occasion to use more information. Few employers offer their workers a choice of health insurance plans, and the number of people who insure themselves individually is small. In light of the limited market for the information and the substantial expense of compiling it, potential publishers have no incentive to undertake comparisons of plans.

An exception is FEHBP, under which Federal employees may choose their health insurance plan from several alternatives (see app. C). The information that has been prepared by each plan and distributed by the Federal Office of Personnel Management (OPM) has not lent itself to comparisons among plans. The brochures have neither compared alternative plans nor presented each plan's benefits or costs in a standardized way. Another problem relating to information is that some prepaid groups have complained that OPM has not distributed adequate information about their plans. Their concern was that OPM's limited distribution of individual plan booklets, coupled with the emphasis on the Government-wide plans such as Blue Cross/Blue Shield and Aetna in OPM's summaries, put the prepaid groups at a disadvantage.

Washington Consumers' Checkbook, a magazine published by a nonprofit organization, illustrates that information for consumers may be generated when there is a market for it. Since 1979, *Washington Consumers' Checkbook* has prepared an annual guide to Federal plans in the Washington, D.C., area. Unlike OPM literature, the guide draws conclusions about the plans. It compares plan benefits, special features such as dental coverage or customer service, eligibility, premiums, and out-of-pocket costs. The publication has been widely marketed in the Washington, D.C., area and is available in Federal personnel offices. The results of the comparisons may have influenced employees' selections. During the 1980 open enrollment period, a plan that was ranked highly in terms of benefits for costs increased its Washington enrollment by 120 percent, compared with less than 20 percent nationally (145). The magazine has also conducted local surveys of nursing homes, HMOs, and hospitals to assist consumers in choosing plans and providers.

Stimulated by recommendations from the General Accounting Office and perhaps by the example of *Washington Consumers' Checkbook,* OPM has experimented with booklets summarizing the plans. During the recent open enrollment period, OPM's materials to each employee included charts comparing the premiums, benefit coverage, and cost-sharing provisions of each plan. No estimates were made of the out-of-pocket expenses under each plan.

The nature of information may also inhibit its provision in medical care as in other fields (205). The entity that develops the information may not be able to retain exclusive control over its use. Once comparisons of plans or providers are made and printed, the publication is easily passed around and shared by many people. The original source of the information may therefore have difficulty selling enough copies to make the undertaking profitable.

Governmentally funded agencies have developed information about local providers. The Northern Virginia Health Systems Agency (HSA) published a directory of information about local physicians (see app. G). It lists each one's credentials, services provided, and insurance and billing practices. No fees are included. Several HSAs in the Washington, D.C., area also cooperated to produce data about the volume of cardiac surgery in local hospitals. The association that was found between low volume and high mortality rates prompted measures to regionalize facilities, especially for pediatric cardiac surgery (174).

Both legal and professional prohibitions have restricted the provision of information about medical providers and technologies. Although these policies are changing to permit advertising, their existence in the past helps to explain why providers themselves have not publicized their fees and services.

The Federal Government originally prohibited FEHBP plans from advertising. That prohibition was dropped in the late 1960's, and in recent years participating plans have notably increased their advertising (see app. C).

In the case of optometric examinations, restrictions on price advertising have been associated with higher prices. In States that banned price advertising for optometrists and opticians, prices for similar services were 17 percent higher than in the States that permitted such advertising (86). These results support the contention that price information helps consumers to search more effectively for lower prices. This example also pertained to vision services, an area less likely to be covered by health insurance.

Related to legal restrictions is access to data that have been collected. Several professional groups now collect data about the performance and credentials of providers. The Joint Commission on the Accreditation of Hospitals tests the accuracy of hospital laboratory tests on blinded samples. In the course of utilization review, Professional Standards Review Organizations (PSROs) compile data about the use of services and outcomes of patients. Hospitals know whether or not their staff physicians are board certified.

The confidentiality of such data varies by State. Information about board certification is not generally available, but California hospitals report the board certification of their physicians to a public commission. Maryland legislation has made PSRO data nonconfidential. The Baltimore City PSRO has combined its data with those from the Maryland Cost Review Commission to develop profiles by provider on fees, length of stay, and patient outcome. Area employers and unions in turn have used this information to develop health insurance packages and to advise workers about providers (174) (see app. H).

Methodological Problems of Developing Information

Aside from the incentives inhibiting consumer information, methodological problems plague the development of accurate comparisons of plans and providers.

There are inherent problems in comparing the cost of health plans. The use of specific benefits and the out-of-pocket costs incurred depend on the characteristics of the individual or family. Statistics about average costs may therefore have limited usefulness to a particular person. More sophisticated estimates might be possible although they would certainly be more expensive to calculate. Cost by age-sex category or a complete assessment of risk status could give a person a better indication of the direct costs likely.

Comparisons of hospitals or physicians also pose difficult problems. Undesirable outcomes, such as mortality or infection rates, may be misleading because of small sample sizes or differences in the case mix of their patients. Chapter 4 has discussed the tenuous relationship between structural indicators of quality (such as board certification) and desirable health outcomes. Cost comparisons face problems common to developing any such index of services. A provider may have higher prices for some services and lower prices for other services. The ranking of providers depends on the services selected for the index and the method of weighting their prices.

IMPLICATIONS FOR POLICY

Private Sector Provision of Information Under Increased Competition

The current paucity of consumer information does not necessarily imply that needed information would be unavailable in a more competitive situation. The different choices that consumers would be called on to make and their heightened sensitivity to price in such a situation might stimulate the development of new information.

If consumers have more interest in the cost of health plans and more choice among alternatives, both the plans and other private organizations may respond by providing cost information and plan comparisons. In the course of their operations, third-party payers currently assemble information on providers' charges and use of technologies. If competition on the basis of price intensified among plans, insurers might be more likely to share their information with the public to attract customers. More private sector activities such as *Washington Consumers' Checkbook* might also be stimulated by increased consumer choice and interest in costs and supporting information.

On the other hand, consumer information has not appeared in some areas where one would have expected it. It is puzzling that third parties have not publicized providers with high claim rates to discourage overuse (211). Information was not developed for the elderly about policies to supplement Medicare, despite the fact that elderly consumers constitute a large market and bear the full cost of those premiums (see app. F).

If consumers become more interested in the cost of providers and technologies and providers compete on the basis of price, medical professionals, hospitals, or their professional associations may themselves publicize information about charges. In the absence of advertising restrictions, vision care providers advertised their prices, and prices were lower (86). The case of vision care has many similarities with greater cost sharing, since eyeglasses and nonphysician services are less likely to be covered by health insurance.

There is no direct information about whether greater cost sharing leads consumers to search for lower priced care. With greater cost sharing, people would have more incentive to search for lower cost providers and to become more knowledgeable about services, such as primary care, over which they have more control (63). Consumers would also have more financial reason to seek second opinions about potentially costly procedures, such as surgery. But greater cost sharing might deter consumers from seeking second opinions (58,86), because the consumers would have to pay the additional cost of the second consultation.

Business, labor unions, and coalitions of purchasers of health insurance have become increasingly active in efforts to contain medical costs. Although their informational activities have mainly involved educating workers about health insurance benefits, these groups have expressed interest in developing data bases and informing people about medical technologies (137). The cooperation of employers and unions with the Baltimore City PSRO indicates the potential for developing and disseminating information to workers (see app. H).

Role of the Public Sector Under Increased Competition

The role of Federal, State, or local governments in providing consumer information would depend on their responsibilities for administering greater competition among plans and consumers' selection of plans. It would also depend on the type and quality of information that would emanate from the private sector.

Both PSROs and HSAs could develop information about specific providers. PSROs have the data (if confidentiality problems could be surmounted), and HSAs have the community perspective. Methodological difficulties of comparisons would remain and would need to be addressed so that information would not mislead consumers. Because good evaluations can be expensive, it would be important to determine needs and priorities carefully.

The problems that arose with medical insurance to supplement Medicare call into question the ability of the private sector to provide adequate information about insurance plans to the public (see app. F). Physical limitations have hindered many elderly people from gaining information because they have had difficulty reading brochures or shopping for plans and providers. Aside from these special limitations, however, there were problems about the availability of information. The complexity and variation of the supplementary insurance policies made them difficult to compare. No private groups, such as *Washington Consumers' Checkbook*, came forward to offer objective comparisons among plans. Although elderly people had an incentive to consider cost because they were paying the total premiums, they often bought duplicate coverage and misunderstood the benefit limitations.

The backdrop to this situation is the complexity of Medicare coverage itself. Medicare benefit coverage and cost sharing have bewildering variations, and policies to supplement the gaps have been correspondingly complex. Therefore, the problems and experience with supplementary insurance to Medicare may not apply to plan choice in which a minimum level of comprehensive benefits is required and standardized, as Enthoven has recommended (79).

The response to the problems with supplementary medical insurance has been the adoption of voluntary Federal certification that operates in conjunction with State regulation (see app. F). In States that do not have an approved regulatory program, insurers may submit policies to the Federal Health Care Financing Administration (HCFA) for review. Certification will be granted if the policy meets minimum standards for benefits, loss ratio, disclosure, and administrative procedure. This approach is one of excluding policies that do not meet the minimum criteria. In 1979, for example, four States prohibited policies against dread disease (207).

In regulating information about supplementary policies, States have employed two other strategies, standardization of benefit coverage and information disclosure (see app. F). Wisconsin pioneered these approaches. In 1978, it required that supplementary Medicare policies conform to the standards for one of four designated categories. Standardization is combined with the provision to consumers of information to explain the categories. Wisconsin has periodically published representative prices to facilitate comparisons of plans. Other States, notably California and Massachusetts, use variants of the standardization approach. A common effect, clearly discernible in Wisconsin, it that the number of active insurers drops substantially after the market is controlled.

Many States have disclosure requirements for these supplementary policies, and some have them for all health insurance sold to the elderly (see app. F). Some States require that the benefits and gaps in coverage be listed. Wisconsin alone mandates that a disclosure form be provided at the time of sale, rather than with the delivery of the policy. Few States require the use of consumer information booklets. About half of the States, as well as HCFA and the National Association of Insurance Commissioners, have such brochures available.

Congress has mandated that HCFA survey elderly insurance consumers in six States that have taken different regulatory approaches (see app. F). The diversity among States could serve as natural demonstration projects and suggest desirable approaches for any future Federal involvement in administering greater competition among plans for the entire population.

The design and operation of FEHBP also provides much relevant experience. Comparative information about plans has undergone great improvement recently. Comparing plans remains difficult, however, because of the diversity in benefit coverage and cost-sharing provisions.

Possible models for the Federal Government's administrative role in plan competition are its regulation of the disclosure of financial information through the Securities and Exchange Commission (SEC) and the Truth-in-Lending laws (79). Since the 1930's, SEC has required basic standardized, comparative financial information of public companies. The Government does not generate the information itself, but rather requires the individual companies to do so. Information disclosed by companies is reviewed by SEC for completeness and fairness under the threat of severe civil and criminal penalties for false or misleading information (see app. I).

The Truth-in-Lending laws of the 1960's and 1970's have similarly attempted to enhance competition among lenders and to promote the informed use of credit by standardizing terminology in the credit cost area. Such laws are regulated by the Federal Reserve System (see app. I).

Using these existing models, the Federal Government could require providers to generate basic, minimum, and comparable information, such as premiums, likely out-of-pocket costs, and benefits covered. It would also be possible to require information about indicators of quality or practice style, such as ambulatory and hospital utilization rates, disenrollment rates, and board certification of physicians. As with SEC, providers could have to attest to the accuracy and completeness of submitted data or be subject to civil and criminal penalties (see app. I).

Especially in the case of SEC, a problem encountered with regulation of information disclosure is that the costs of generating the information have sometimes become prohibitive for the smaller providers (see app. I). A possible implication in the medical care area is that smaller provider groups and plans may be at a comparative disadvantage if information disclosure is mandated.

These models relate to insurance plans and do not address information needs regarding use under greater cost sharing. Medical experts as well as consumers now lack knowledge about the effectiveness of many technologies and meaningful measures of provider competence. These deficiencies would persist under greater cost sharing. What would differ is the importance of consumer knowledge about initiating use. With price acting as more of a deterrent, people would exercise more discretion about seeking care. This change implies a need for consumers to improve their knowledge of effective preventive technologies and their ability to distinguish self-limiting from other conditions.

Appendixes

Appendix A.—Method of the Study

This report, *Medical Technology Under Proposals To Increase Competition in Health Care*, grew out of the OTA study *Strategies for Medical Technology Assessment*. In the course of that study, the House Committee on Energy and Commerce and the Senate Committee on Labor and Human Resources requested that OTA expand its analysis of information needed under different payment methods to provide a separate document on the implications for medical technology of proposals to increase competition.

At the September 1981 meeting of the Health Program Advisory Committee, members commented on a proposed outline for the study and suggested that it focus on proposals to increase cost sharing and to increase competition among comprehensive care organizations, but that antitrust proposals be excluded. A review of legislation during the 96th and 97th Congresses that incorporated these two kinds of proposals, and of relevant literature from economic theory, health services research, and policy analysis was begun in October.

During October and November, an advisory panel was selected, with Lester Breslow of the School of Public Health, University of California, Los Angeles, as the chair. The 16 panel members had different backgrounds and perspectives related to the issues of the study: the two different approaches to increase competition, economics, medicine, prepaid group practice, individual practice associations, consumers, publishing, technology assessment, government, third-party payment, and policy analysis. One member of the Health Program Advisory Committee, Rashi Fein, also served on the advisory panel.

During December 1981 and January 1982, the members individually suggested modifications in the revised outline of the study and recommended experts and publications to consult for further information. Four contractors were selected and began work in December and January to provide background information that could be incorporated by OTA staff into the report.

The first panel meeting was held February 26, 1982, at OTA. The panel discussed draft documents that had been prepared by OTA staff outlining the proposals to increase competition and the concept of competition, as well as several case studies that related to the proposals. These case studies are included as appendixes to this report. In addition, several of the contractors described how they were addressing their subject areas. The panel suggested changes in the draft documents, additional case studies, and ideas for the contractors to explore further.

Following the panel meeting, the OTA staff prepared a draft report. The draft was distributed to the advisory panel, the Health Program Advisory Committee, and other reviewers in Government, industry, economics, and policy analysis. Discussion of the draft report was the topic of the second panel meeting, which was held at OTA on April 20, 1982. Incorporating comments from outside reviewers and other OTA staff, the study staff prepared a final draft report during May.

Appendix B.—Health Program Advisory Committee

Sidney S. Lee, *Chair*
Michael Reese Hospital and Medical Center
Chicago, Ill.

Stuart H. Altman
Florence Heller School
Brandeis University
Waltham, Mass.

Kurt Deuschle
Mount Sinai School of Medicine
New York, N.Y.

Carroll Estes*
School of Nursing
University of California
San Francisco, Calif.

Rashi Fein
Center for Community Health and Medical Care
Harvard Medical School
Boston, Mass.

Melvin A. Glasser
Committee for National Health Insurance
Washington, D.C.

Patricia King
Georgetown Law Center
Washington, D.C.

Joyce C. Lashof
School of Public Health
University of California
Berkeley, Calif.

Mark Lepper
Rush-Presbyterian-St. Luke's Medical Center
Chicago, Ill.

Margaret Mahoney
The Commonwealth Fund
New York, N.Y.

C. Frederick Mosteller
Department of Health Policy and Management
Harvard School of Public Health
Boston, Mass.

Mitchell Rabkin
Beth Israel Hospital
Boston, Mass.

Dorothy P. Rice*
Department of Social and Behavioral Sciences
School of Nursing
University of California
San Francisco, Calif.

Richard K. Riegelman*
School of Medicine
George Washington University
Washington, D.C.

Walter L. Robb*
Medical Systems Operations
General Electric
Milwaukee, Wis.

Frederick C. Robbins
Institute of Medicine
Washington, D.C.

Rosemary Stevens
Department of History and Sociology of Science
University of Pennsylvania
Philadelphia, Pa.

Kerr L. White
Rockefeller Foundation
New York, N.Y.

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*Appointed summer of 1982.

Appendix C.—Federal Employees Health Benefits Program

Introduction

Shortcomings in the medical care marketplace have become major policy issues of the last decade. A somewhat variegated landscape of "procompetitive" proposals have emerged as possible solutions to the perceived problems of the industry. But these proposals have been complicated by debate and disagreement over the likely feasibility and results to be expected from implementation of the various policy options. To some extent, the lack of consensus has stemmed from lack of experience with competitive-type plans (106).

One plan which might elucidate current policy discussions is the Federal Employees Health Benefits Program (FEHBP), which provides one of the few operational experiences with a competitive-type approach. For over 20 years, FEHBP has provided Federal employees and annuitants with an annual choice among a range of health insurance alternatives and plans. Because of its design, FEHBP experience has, somewhat ironically, generated interest among both proponents of the recent procompetitive proposals and advocates of the universal health insurance proposals of the early and mid-1970's. Competition advocates, such as Enthoven and others, suggest that the 20 years of FEHBP experience have demonstrated both effectiveness and remarkable administrative simplicity, and that its potential as a model for procompetitive strategies should not be overlooked (79).

Similarly, others a decade ago hailed FEHBP as "a viable model for the implementation of universal health insurance in the country, accommodating the aspirations of the providers of services and the recipients of services within politically tolerable cost limits" (2). On the other hand, the critics of procompetitive proposals have used FEHBP experience to warn that multiple choice of plans will not lead to enhanced competition, or that if it does, the competition will occur at the expense of creating other problems, such as "free-riding," cream-skimming, or adverse selection (19,106).

This appendix synthesizes existing research and evidence on the history, structure, and experience of FEHBP. Information has been gathered from published and unpublished sources, as well as from several discussions and interviews with individuals previously or presently connected with the program. The appendix should be read especially from the perspective of the major impact areas of the overall study: 1) utilization of medical technologies, 2) quality assurance, and 3) information availability and consumer choice.

History and Structure of FEHBP

FEHBP was considered by Congress for 12 years. First introduced in 1947, the program was established by the Federal Employees Health Benefits Act (Public Law 86-382) in September 1959, and went into operation on July 1, 1960. Enrollment was (and remains) voluntary and initially covered 1.7 million enrollees and 3.7 million dependents (198).

The initial rationale for FEHBP was the attempt by the Federal Government to retain competent people in its employment. By 1950, it was considered a normal part of the operation of private industry for the employer to pay some or all of the health insurance premiums of employees. Health insurance benefits became a regular part of the fringe benefits package along with disability and retirement pensions. Private industry and organized labor became the backbone of the financing of health insurance in this country. Although it has been the largest single employer in the country, the Federal Government began paying for health insurance premiums for its employees after it became common for private industry to do so (2,120). The bill, then, was designed to "close the gap" which existed and bring the Government abreast of most private employers.*

The Civil Service Commission (CSC) was originally partial to an indemnity plan, one basic type that could be let out for bids to private insurance companies and simplify administration. Despite the commission's wariness of unlimited choice of health insurance benefit packages and delivery methods, vested insurance interests who had thousands of Government employees on their rolls convinced Congress of the need for different plans (2,120). As a result, FEHBP finally authorized a wide range of choice of plans by all employees and was, in effect, a negotiated compromise among many divergent and highly organized interests.

It was the only approach which at any time during the 12-year legislative process gained acceptance by all of the principals: the American Medical Association, Blue Cross/Blue Shield, insurance companies, employee unions, group prepayment plans, and individual practice plans. As a result, the Federal

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*U.S. House of Representatives, *United States Code: Congressional and Administrative News* (St. Paul, Minn.: West Publishing Co, Aug. 20, 1959).

Employees Health Benefits Act has permitted all types of health benefits plans—service, indemnity, group practice, and individual practice—and various intermixtures of these types to continue development along their own individual lines (234).

With the passage of the act, a "task force" approach was taken to transfer legislation into implementation over a brief 10-month span. Individual task force members were drawn from a broad range of backgrounds and affiliations, and placed within the Retirement Bureau of CSC. Interestingly, the Department of Health, Education, and Welfare (DHEW)* argued the program would be better placed within its own organizational walls, but there was a deliberate congressional decision to define the program not as a health care program but as an employee benefit program (120).

Over the 10 months, regulations were written, carriers selected and approved, and FEHBP generally operationalized (120). In the final negotiations with the carriers, four basic types of approved plans emerged within each of which there were "low" and "high" options (2,198):

1. Contracts with two *Government-wide plans*, open to all employees. One was a service benefit contract with Blue Cross/Blue Shield for basic coverage plus a major medical plan for high-cost episodes with a deductible and ceilings. The other was an indemnity contract with Aetna, a private insurance company, for basic and major medical insurance with deductibles, coinsurance, and ceilings.
2. Contracts with 13 separate *employee organization plans* for coverage analogous to the indemnity contract and hence of the same type.
3. Contracts with eight separate *individual practice plans*, open only to those residing in the covered area and providing direct payment to participating physicians and hospitals. These contracts differed from the Blue Cross/Blue Shield service contract only in that they covered all physician services in- and out-of-hospital, with very modest charges at times of services, as well as hospital services.
4. Contracts with 13 separate *prepaid group practice plans* with salaried doctors and comprehensive physician services regardless of site of service plus hospital service. Again, these plans were open only to those residing in the covered area.

These four basic categories of health insurance are still provided today, and with more than 9.2 million Federal employees, annuitants and their dependents have an annual choice among a range of over 120 private health plans. Each participant has access to two Government-wide plans: Blue Cross/Blue Shield, and Aetna, plans which provide, respectively, service benefits and indemnity benefits coverage, each with a high and low option. Depending on geographical location and affiliation, participants can also choose from 20 employee organization plans. (Established by various unions and employee associations, these insurance plans vary in availability. Some are available only to members, while most are available to all employees, either on an unrestricted basis or on the basis of payment of annual association dues which typically range from $25 to $35.) As many as six group practice plans and individual practice associations can be found as well, depending on one's area of residence (106).

The authorizing provisions of the Federal Employees Health Benefits Act established what were perceived in 1959 as "significant" requirements and minimum standards for participating plans (120). All plans must: cover a range of benefits; offer conversion privileges; enroll without regard to age, health status or hazardous employment; provide coverage without regard to waiting periods or exclusions for most preexisting conditions; and cover care regardless of geographic location. Participating plans are required to establish reserves and report statistics to the administering Government agency. Plans are required to establish a rate structure with a single individual and a single family for each option and rate. No plan may offer more than two options (e.g., high, low) (106).

As employer, the Federal Government's contribution was originally fixed by law at one-half the cost of the least expensive option offered by either one of the two Government-wide plans. However, the marked preference by employees in the early years for high-option enrollments steadily reduced the percentage of total premium contributed by the Government. Between 1961 and 1970, the Government contribution slipped from 38 percent to 24 percent of the average total premium (234,259).

In the 1970's, the Federal Employees Health Benefits Act was amended more than once to allow the Government to contribute a fixed dollar amount based on specified cost-sharing ratios. The Government now contributes a fixed dollar amount equal to 60 percent of the average premium cost for the six largest plans, subject to the restriction that the total Government contribution cannot exceed 75 percent of the premium of any plan. For postal workers, the Government contributes 75 percent of the average, subject to a 93.75 percent limit. In 1981, the annual maximum Government contribution for nonpostal worker participants was $366 and $796, respectively, for individual and family plans (198).

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*Now the Department of Health and Human Services (DHHS).

Participants make their choices upon entering employment and are eligible to change plans whenever their status changes (e.g., upon marriage) or certain other changes occur (e.g., a move makes use of an HMO plan infeasible or the enrollee is terminated by an employee plan). Each participant may also switch plans once a year on an unrestricted basis.

During this "open season" period, employees and annuitants are provided with comparative information on the coming year's benefits and rates for each available plan. Changes can be initiated by completion of a brief form; those who do nothing remain enrolled in their previous plan. Participation is voluntary and no person may be covered by two plans. If both members of a married couple are Federal employees, each may join an individual plan but they jointly may choose only one family plan.

FEHBP is today administered by the Office of Personnel Management (OPM), the organizational descendant of CSC. In addition, OPM determines the plans qualified to participate, handles grievances and complaints, negotiates rates, and disseminates information on each plan (106). The program is authorized by a mere 8 pages of legislative language and approximately 13 pages of regulations.

Enthoven (79) and others have lauded the relative legislative simplicity and administrative efficiency of the Federal Employees Health Benefits Act, especially when compared with another Federal program, Medicare, with its legislation of 142 pages and accompanying 400 pages of regulations. A study by Hsiao (124) also found that Federal administrative expenses per unit of output (i.e., number of claims processed) were less under FEHBP than under Medicare.

Competition Within FEHBP

A recent study (106) produced by the Department of Health and Human Services suggests that some amount of competition exists within FEHBP. This is reflected most prominently in the shift by FEHBP enrollees from Government-wide plans to employee organization plans and, to a lesser extent, health maintenance organizations (HMOs). In the past 5 years in particular, enrollees appear to have selected a wider group of plans. The choices also appear sensitive to shifts in the relative premium prices across the plans. The following discussion draws from this study.

FEHBP Differences From Proposals To Increase Competition

The design of FEHBP obviously dictates the limits on what can be learned from FEHBP experience. While the program incorporates several features which are included in proposals to increase competition, it does not contain all the features of the various procompetition alternatives. For example, while FEHBP provides for multiple choice among plans, the employer contribution varies across plans, and no rebate is provided to encourage choice of low-cost plans.

Discrepancies between FEHBP and the various competitive models need to be considered and are discussed below. The analysis suggests that FEHBP experience is most relevant to competition proposals that focus on the provider side and stress competition among plans with similar benefit scope and least relevant to proposals that stress use of tax and rebate incentives to promote low-cost, low-benefit coverage.

VARIATION IN BENEFIT RANGE ACROSS PLANS IS LIMITED

The plans offered within FEHBP tend to have comprehensive benefits. Even for those plans marketed as low-option, the amount of cost sharing is limited. For example, the 1981 Blue Cross/Blue Shield low-option plan pays 100 percent of covered hospital charges for the first 90 days of confinement and 75 percent of charges for later hospital days, physician visits, prescription drugs and other supplementary services; and 60 percent of mental health outpatient care up to a lifetime maximum benefit of $50,000.* Surgical procedures, in-hospital visits, and diagnostic tests are reimbursed in full up to a schedule of allowances and thereafter at 75 percent. There is a $200 deductible for supplementary services ($400 maximum per family) and a $2,000 catastrophic limit on services other than mental health services.

In 1980, 71 percent of all low-option enrollees were in the low-option Blue Cross/Blue Shield plan, 27 percent were in Aetna, and the remaining few were in two employee plans (Postmaster, Mailhandlers) and one HMO (Group Health Association (GHA) of Washington, D.C.).

While plans tend to cover a comprehensive range of services, the structure of the benefits offered by the different plans included within FEHBP varies. The greatest variation arises as a result of differences in coverage for mental health and dental services. However, the plans also vary in the structure of the cost sharing they impose on various covered services, the use of a catastrophic cap or limit, and the types of other benefit restrictions or exclusions used. For example, the employee-based Government Employees Health Association (GEHA) plan emphasizes extensive first-dollar coverage combined with some copayment on hospital care and a low catastrophic limit. The Postmaster's high-option plan restricts reimbursement for outpatient and ambulatory care but includes an extensive dental benefit.

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*Only recently have these benefits been changed. See section entitled "Current Problems of FEHBP" for a discussion of these changes.

All federally qualified HMOs also may participate in FEHBP. Over 100 have elected to do so. The inclusion of a large number of HMOs within the FEHBP system also results in a range of plan choice, including choices involving group and individual practice organizations.

Because FEHBP does not emphasize plans with extensive cost sharing, the experience of the program does not provide a good indication of the relative popularity of these plans. Alternative FEHBP plans, however, do vary in structure of their benefits. For this reason, it is possible to use FEHBP experience to examine enrollment choice among multiple plans with extensive benefits. It is also possible to use the experience to consider choices between traditional insurance plans and HMOs.

FINANCIAL INCENTIVES TO BE COST CONSCIOUS ARE CONSTRAINED

FEHBP provides an incentive for participants to consider cost in selecting plans. Except for postal workers, each employee or annuitant who decides to enroll pays a minimum of 25 percent of the premium cost for the plan selected, and given the methods used to compute the employer contribution, employees may pay as much as 50 percent of the premium.* This situation differs substantially from private industry, where nearly three-quarters of all workers have health plans totally financed by their employer and just over half receive coverage for their dependents without cost (30).

Table C-1 provides a summary of the cost incentives built into FEHBP, focusing on a selected number of high-volume plans. As can be seen, the total premium cost varies substantially by plan.**

Differences in premium rates lead to substantial variation in the required employee contribution for the various plans. The most consistent differences are between the high- and low-option versions of the Government-wide plans in which high option enrollees pay from $200 to $600 more per year than those enrolled in low-option plans. Substantial differences also exist between the high-option versions of the Government-wide plans and several of the other plans offered. For example, GEHA enrollees pay from $257 (individual) to $522 (family) less per year than those enrolled in Blue Cross/Blue Shield high option. Given these statistics, the financial incentives to consider cost in selecting plans within FEHBP would appear substantial.*

Two provisions of FEHBP constrain the size of the financial incentives built into the system and the impact of these incentives. The first is the cap on the employer contribution at 75 percent. Persons enrolling in lower cost plans forego a portion of the potential Federal contribution to their premium. This raises the cost of these plans to the individual and reduces the difference in price between competing plans. It also reduces the incentive for sponsoring organizations to develop low-option or low-cost plans within FEHBP.

At present, the cap on employer contribution affects most of the Government-wide low-option plans, whose enrollees must pay $64 to $197 that would otherwise be paid for by the Government. The full impact of the cap on employer contribution is difficult to evaluate because of its potential effect on the types of plans offered.

The second constraint on the financial incentives included in FEHBP arises because the program provides no rebate for those choosing plans where the Federal contribution is below the maximum allowed. As with the cap on employer contribution, this affects most those who choose low-option plans and therefore forego $146 to $369 of the potential maximum Federal contribution. Thus, both the cap on employer contribution and the lack of a rebate reduce incentives within FEHBP to choose or market low-option plans.

CROSS SUBSIDIES DISTORT CHOICE TO SOME EXTENT

Within FEHBP, a single premium rate is established for each option (high/low) and membership category

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*Employees enrolled in Blue Cross/Blue Shield high-option plans pay 46 to 50 percent premium cost because the plan has a total premium which is greater than the average premium used in computing the Federal employee contribution. As indicated previously, cost sharing on the premium is lower for postal workers than for others. Postal workers pay from 6.25 to 35 percent of the premium cost for the plan.

**It is interesting to note that this occurs despite a generally similar scope of benefits across many of the plans. However, premium price should not be used to provide a measure of relative actuarial value across plans. Aside from HMOs (which with the exception of Group Health Association are community-rated), FEHBP plans are experience-rated. The premium reflects the utilization experience of persons electing to enroll, as well as the scope of benefits offered.

*It is possible that enrollees consider the per pay period cost rather than the yearly cost in determining which plan to select. While these two costs may be similar economically, the psychological impact may be greater when expressed as a yearly figure. If true, the financial incentives built into FEHBP may be less than they appear, since employees may not be consciously aware of the magnitude of the cost differentials between plans.

Table C-1.—Cost Incentives in the FEHBP Allocation of Premiums Between Government and Employee by Plan, 1981

	Individual plan				Family plan			
Plan[a]	Total premium	Employee contribution per year[b]	Equal employer contribution shortfall[c]	Amount foregone by 75% cap[d]	Total premium	Employee contribution per year[b]	Equal employer contribution shortfall[c]	Amount foregone by 75% cap[d]
Blue Cross—high option	$781	$386	0	0	$1,720	$794	0	0
Blue Cross—low option	256	64	$203	$64	745	186	$369	$186
Aetna—high option	660	264	0	0	1,319	393	0	0
Aetna—low option	333	83	146	83	786	197	337	197
American Federation of Government Employees	614	219	0	0	1,342	415	0	0
Alliance Health Benefit Plan	618	222	0	0	1,516	589	0	0
American Postal Workers Union	657	262	0	0	1,589	662	0	0
Government Employees Benefit Association	635	239	0	0	1,692	765	0	0
Government Employees Hospital Association	517	129	7	7	1,089	272	110	110
Mail handlers—high option	432	108	71	71	1,188	297	36	36
Mail handlers—low option	332	83	146	83	934	233	226	226
National Association of Letter Carriers	683	288	0	0	1,436	708	0	0
California—INA	701	306	0	0	1,758	832	0	0
California Kaiser (N)	514	128	10	10	1,309	382	0	0
California Kaiser (S)	660	264	0	0	1,694	690	0	0
D.C. GHA—high option	754	359	0	0	1,921	995	0	0
GHA—low option	538	142	0	0	1,445	518	0	0
Kaiser Georgetown	701	306	0	0	1,770	843	0	0
George Washington University	707	312	0	0	1,828	901	0	0

[a] This is a partial list of all plans within FEHBP.

[b] Employee contributions refer to nonpostal workers only. The premiums and financial requirements for annultants are identical to those for employees in FEHBP.

[c] In 1981, the Federal Government paid a maximum of $395.46 for an individual plan and $926.64 for a family plan for workers other than postal workers. This figure reflects the difference between this amount and the amount of the actual Federal contribution to the indicated plan.

[d] This reflects the amount of Federal contribution for the indicated plan which was lost because of the 75 percent cap on maximum employer contribution. The figure reflects the contribution necessary to eliminate any employee contribution or obtain the maximum Federal contribution, whichever is less.

SOURCE: M. Gold, "Competition Within the Federal Employees Health Benefits Program: Analysis of the Empirical Evidence," unpublished draft staff paper, Office of Assistant Secretary for Planning and Evaluation, Department of Health and Human Services, Washington, D.C., November 1981.

(individual/family) within each plan. HMOs establish their premiums using community rating principles. Other plans use experience rating. Under experience rating, the premium is a function of the benefits provided, the use of those benefits given the characteristics of those enrolled, and the reimbursement made for the services used. This method of rate-setting may make it more attractive for certain kinds of individuals to join some plans than others. For example, older persons more likely to have high expenditures may favor more generous benefit plans, as their expected value per premium dollar is lower than younger members'.

Aside from these obvious adverse selection concerns, one possible effect is that joining HMOs becomes less attractive for persons residing in high-cost cities. Such organizations are geographically based, with rates that reflect the costs of medical care in those communities. In contrast, Government-wide and similarly dispersed membership plans have rates which reflect the average experience across both high- and low-cost areas. Because of its diverse functions (e.g., postal service, social security), the Federal work force is dispersed throughout the Nation as well as abroad.

In 1978, only 13 percent of the paid civilian work force was in the D.C. area. About half of the work force was located either in D.C. or in one of the 10 States with Federal regional offices (57). The influence of geographic location on premium levels for various plans cannot be examined without considerably more analysis. HMOs appear to have kept their rates competitive with those of Blue Cross/Blue Shield (see table C-1). Whether they have done so by reducing the actuarial value of the benefits cannot be determined, however.

Some suggest that the low-option Government-wide plans subsidize the high-option plans, which would enhance the popularity of the latter by reducing premium cost relative to actuarial benefits. Data on the recent experience with the Government-wide plans within FEHBP as shown in table C-2 do not support this argument. Since 1974, the payout ratio (i.e., benefit costs as a percentage of subscription income) has been lower for Blue Cross/Blue Shield high-option plans

Table C-2.—FEHBP Benefit Costs as a Percentage of Subscription Income by Plan and Option: Government-wide Plans, 1963-77 (selected years)

Plan and option	November 1963-October 1964	Year 1967	1969	1970	1972	1974	1975	1976	1977	1978	1979
Blue Cross/Blue Shield											
High option	107.2	92.6	99.1	105.4	86.6	93.9	97.2	85.7	88.6	87.3	98.9
Low option	73.1	63.1	86.4	84.4	81.6	117.8	136.2	136.8	127.4	120.0	109.5
Aetna											
High option	110.3	101.5	86.4	91.8	92.2	104.6	103.6	77.1	95.4	92.4	104.1
Low option	84.2	108.8	97.9	99.4	91.5	96.7	98.2	78.9	97.8	101.1	111.7

SOURCE: M. Gold, "Competition Within the Federal Employees Health Benefits Program: Analysis of the Empirical Evidence," unpublished draft staff paper, Office of Assistant Secretary for Planning and Evaluation, Department of Health and Human Services, Washington, D.C., November 1981.

than for low-option plans. Aetna has experienced similar patterns since 1976.

USE OF LOW-OPTION PLANS BY ANNUITANTS MAKES FEHBP LOW-OPTION EXPERIENCE ATYPICAL

Many annuitants use the low-option FEHBP plans to supplement Medicare benefits. Although changes have been proposed, Medicare is the first payer under present coordination of the FEHBP benefits provisions, as it is with private insurance. Because this arrangement reduces expected plan expenditures, the Government-wide plans and others have elected not to charge individuals with Medicare coverage for deductibles or copayments. Many annuitants choose the low-option Government-wide plans as the equivalent of insurance to supplement Medicare coverage. OPM has encouraged this practice. This circumstance makes analysis of the low-option FEHBP plans difficult and detracts from its utility.*

AVAILABLE INFORMATION AND CONSUMER CHOICE HAVE BEEN LIMITED

This will be discussed in the section entitled "Information Dissemination and Consumer Choice."

Trends in Plan Choice

Figure C-1 presents the distribution of enrollment by type of plan. Over the past 10 years, the share of the FEHBP market held by the Government-wide plans has dropped substantially, with sizable gains for employee plans and, to a lesser extent, comprehensive plans (e.g., HMOs).

From 1970 to 1980, the Blue Cross/Blue Shield market share dropped from 60 to 51 percent. Most of the decline occurred in the past 5 years. Aetna experienced a 5-percent decline in market share, from 18 to 13 percent, generally spread over the 10-year period. In contrast, employee plan enrollment has grown by 75 percent, group practice enrollment by 50 percent, and individual practice enrollment by 40 percent. By 1980, the Government-wide plans held about two-thirds of the market, with employee plans holding about a quarter, and the HMO plans (mainly group practice plans) the rest. The shift away from Blue Cross/Blue Shield occurred at the same time as Blue Cross/Blue Shield's rates increased.

Figure C-2 shows graphically the shift in Blue Cross/Blue Shield enrollment in comparison with the change in premium charges. It shows that the largest decreases in enrollment followed a large 1976 rate increase for Blue Cross/Blue Shield. The statistics in figures C-1 and C-2 suggest that over the past 5 years, competition among FEHBP plans for enrollees has increased, with some competition apparently sensitive to price.

In comparison, the selection of low-option plans has remained relatively stable over time, as shown in figure C-3. Enrollment in low-option plans is limited to about 12 percent of the total FEHBP market. Low-option plan penetration has remained relatively stable for the past 5 years after a decline in the early 1970's. An increased proportion of low-option plan enrollees hold Blue Cross/Blue Shield low-option policies. This group now represents 17 percent of the total Blue Cross/Blue Shield enrollment and an increasing proportion of total FEHBP enrollment.

The data presented also bear on the relative popularity of HMOs and their likely role in a competitive environment. In 1980, HMOs held 10 percent of the FEHBP market. About three-quarters of the HMO enrollees were in group plans. Whether this reflects a small or large penetration is difficult to determine from available data, which merge effects based on consumer choice with those responding to the available supply. HMOs, particularly group HMOs, tend to be located in large cities. Federal employees are geographically dispersed, resulting in only a portion of FEHBP enroll-

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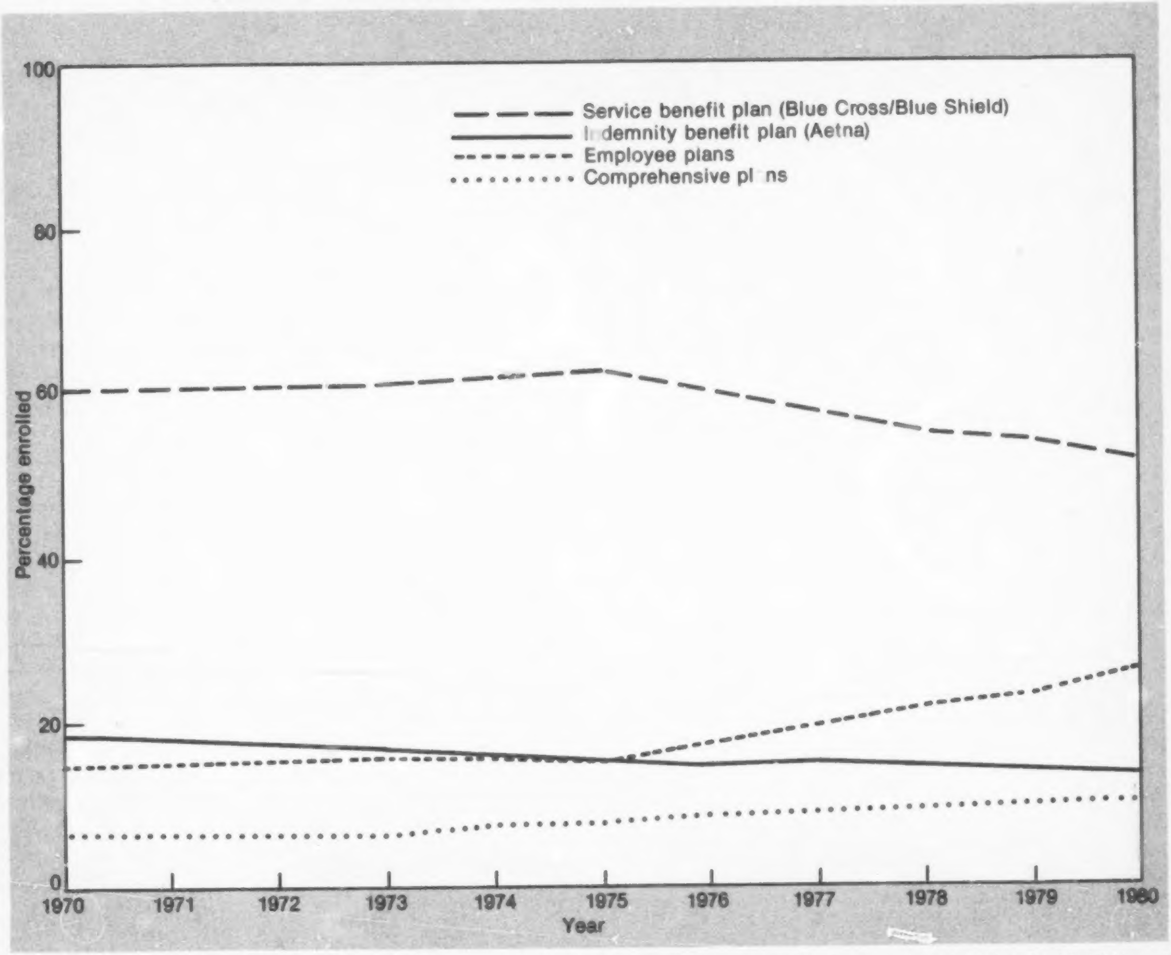
*The number of individuals enrolled in low-option plans is limited to 442,800 contract holders in total. For meaningful analysis, one should omit or analyze separately the employee from the annuitant group. This further reduces the size of the low-option experience and makes difficult any analysis with refined breakdowns or consideration of rare events (e.g., catastrophic care).

Figure C-1.—Percentage of FEHBP Enrollment by Type of Plan, 1970-80



SOURCE: FEHBP Program Statistics-OPM, as cited in M. Gold, "Competition Within the Federal Employees Health Benefits Program: Analysis of the Empirical Evidence," unpublished draft staff paper, Office of Assistant Secretary for Planning and Evaluation, Department of Health and Human Services, Washington, D.C., November 1981.

ment's having access to HMO-type plans. Because of these considerations, the FEHBP experience provides a better measure of the likely penetration of HMOs in the total U.S. than in particular local markets.

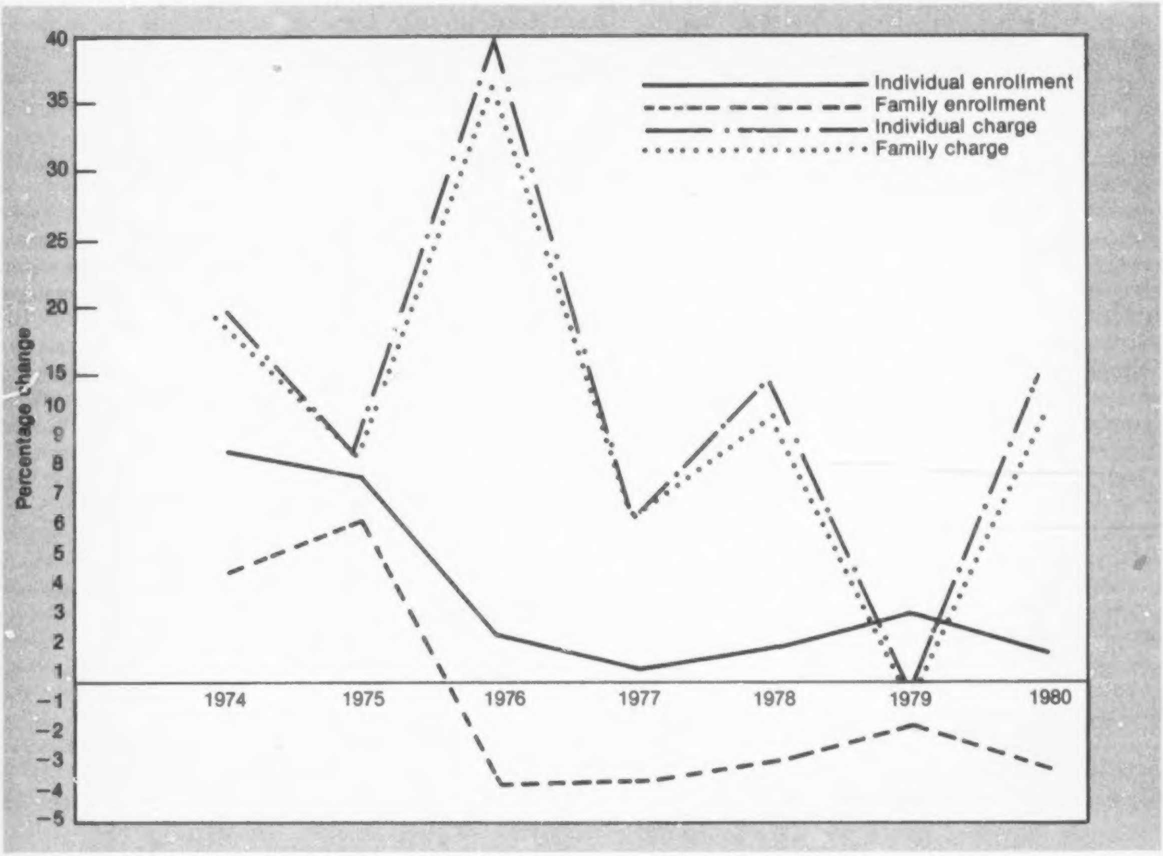
Patterns in Selection and Utilization of Services

Comparison by Types of Plans

There have been few studies comparing patterns in selection among the general types of FEHBP plans and the subsequent utilization of services by enrollees. The earliest study was undertaken by Perrott (219), who looked at the hospital experience of Federal employees covered under the four broad types of insurance plans for the period of 1960 through 1963. The data generally showed a relatively low rate of hospital utilization among individuals insured in the prepaid group practice plans. Perrott's analysis showed that members enrolled in prepaid group practice plans, both options, during the second contract year (1961-62) used 454 nonmaternity hospital days per 1,000 persons covered, as compared with 826 days for Blue Cross/Blue Shield, 729 for employee organization plans, 708 for Government-wide indemnity plans, and 538 for individual practice plans.

The two Government-wide programs combined (Blue Cross/Blue Shield and Aetna) showed a hospital

Figure C-2.—Percentage Change in FEHBP Enrollment and Biweekly Subscription Charge: Blue Cross/Blue Shield High-Option Plan Individual and Family, 1973-80



SOURCE: FEHBP Program Statistics-OPM, as cited in M. Gold, "Competition Within the Federal Employees Health Benefits Program: Analysis of the Empirical Evidence," unpublished draft staff paper, Office of Assistant Secretary for Planning and Evaluation, Department of Health and Human Services, Washington, D.C., November 1981.

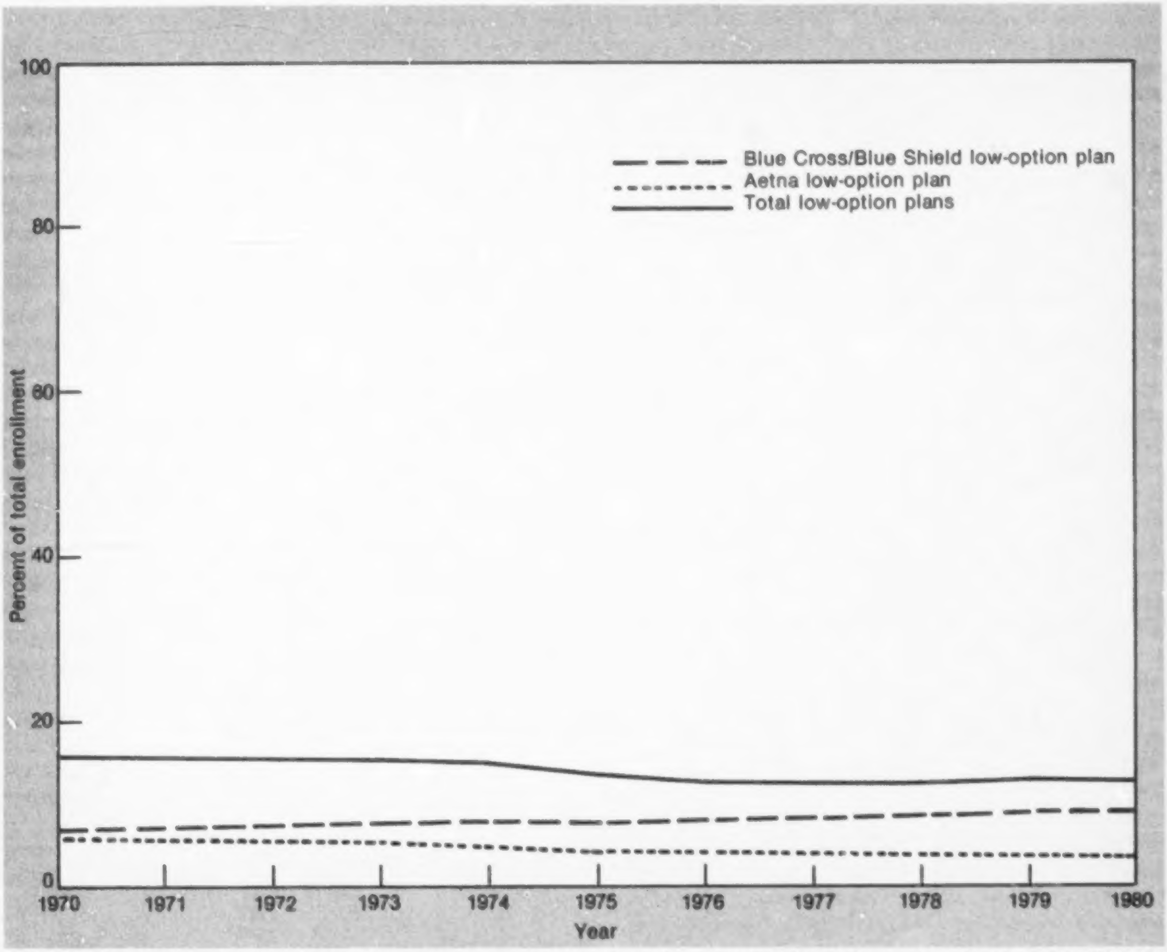
utilization of 791 days for 1,000 persons, or nearly 75 percent higher than the group practice plans (219). While there was some variation from year to year, the same relation held for the other two contract periods (1960-61 and 1962-63) examined. Adjustments for geographical region and then for age exhibited the same patterns of use. Perrott found that the relative differences for days per admission showed no particular trend; rather, it was the difference in admission rates that was responsible for the lower utilization by group practice employees.

Perrott also examined surgical procedure rates for 1961-62. For the Government-wide Blue Shield plan, the tonsillectomy rate was over 2.5 times that of the prepaid group practice plans; the "female surgery" (mastectomy, hysterectomy, and dilation and curettage nonmaternal) rate was 1.5 times that of the prepaid group practices; and the appendectomy rate was nearly double that of the prepaid group practices (219).

Anderson and May (2) examined FEHBP from 1961 to 1969 as a possible model for universal health insurance in this country. The study found a "truly staggering range of use" among the various types of plans. The range of variation was from nearly 900 days per 1,000 employees in the service benefit and indemnity plans to near 400 in group practice plans (see table C-3). Hospital admission rates by plan also revealed significant differences (see table C-4). The data were not adjusted, however, for age, sex or any other variables.

Over the 8-year period studied by Anderson and May, enrollment shifts toward the service benefit plan

Figure C-3.—Percentage of FEHBP Enrollment in Low-Option Plans, 1970-80



SOURCE: FEHBP Program Statistics-OPM, as cited in M. Gold, "Competition Within the Federal Employees Health Benefits Program: Analysis of the Empirical Evidence," unpublished draft staff paper, Office of Assistant Secretary for Planning and Evaluation, Department of Health and Human Services, Washington, D.C., November 1981.

Table C-3.—FEHBP Nonmaternity Hospital Days per 1,000 Enrollees by Type of Plan, 1961-68 (both options)

Year	Total	Service benefit plan[a]	Indemnity benefit plan[b]	Employee organization plans	Individual practice plans	Prepaid group practice plans
1961	880.8	896.4	875.4	950.6	673.8	542.4
1962	762.5	826.2	707.9	729.0	538.0	454.2
1963	802.0	865.4	767.4	754.7	519.9	430.8
1964	831.5	880.5	880.5	722.4	539.9	451.3
1965	999.5	1,078.4	1,102.3	775.8	629.6	484.7
1966	840.2	876.5	883.6	808.6	498.9	408.0
1967	815.6	871.0	836.0	748.8	467.1	392.5
1968	835.1	878.6	884.5	775.1	472.3	418.7
Average all years	845.9	896.6	867.2	783.1	542.4	447.8

[a] Blue Cross/Blue Shield.

[b] Aetna.

SOURCE: O. W. Anderson and J. J. May, *The Federal Employees Health Benefits Program, 1961-1968: A Model for National Health Insurance?* (Chicago: Center for Health Administration Studies, University of Chicago, 1971).

Table C-4.—FEHBP Nonmaternity Hospital Admission Rates per 1,000 Enrollees by Type of Plan, 1961-68 (both options)

Year	Total	Service benefit plan[a]	Indemnity benefit plan[b]	Employee organization plans	Individual practice plans	Prepaid group practice plans
1961	108.9	105.0	103.2	106.8	133.9	70.8
1962	92.1	98.8	77.8	98.3	97.5	57.3
1963	94.0	99.5	85.4	97.2	92.1	55.4
1964	94.9	101.9	83.8	95.5	91.4	54.2
1965	106.7	117.2	99.5	94.0	92.6	58.7
1966	91.6	97.8	84.7	92.7	70.9	46.0
1967	88.9	96.5	81.6	85.5	69.5	44.3
1968	88.9	95.4	84.4	85.5	64.4	48.2
Average all years	95.8	101.5	87.6	94.4	89.0	54.4

[a] Blue Cross/Blue Shield.

[b] Aetna.

SOURCE: O. W. Anderson and J. J. May, *The Federal Employees Health Benefits Program, 1961-1968: A Model for National Health Insurance?* (Chicago: Center for Health Administration Studies, University of Chicago, 1971).

(Blue Cross/Blue Shield) and the capitation payment plans and away from the indemnity plan (Aetna) and employee organization plans were noted. The authors also concluded a strong and growing preference for comprehensive insurance. Comprehensive or "high-option" plans were chosen by 78 percent of Federal employees in 1961; by 1969, 84 percent were in high-option plans. Importantly, though, the formula for Government premium contribution during this period was one-half the cost of the "low option," making comparability with enrollment shifts under later contributory formulas more problematic.

Perhaps the most extensive and best known study was undertaken by Riedel, et al. (227), in the early 1970's. The research compared the characteristics and utilization of enrollees in the Blue Cross/Blue Shield high-option plans with enrollees in Group Health Association (GHA), a large prepaid group practice in Washington, D.C. Annuitants were excluded, as were employees residing outside the Washington, D.C., area. Results indicate that the age and sex distribution was comparable across the two plans. Blue Cross/Blue Shield enrollees tended to have smaller families and to have been members of their plan longer. GHA members were more likely to be black, have incomes under $10,000, and have a working spouse. Total expenditures were equal for those enrolled in individual plans. For families, the GHA enrollee expenditures were greater, reflecting higher payments for premiums but lower out-of-pocket costs.

The study found substantial differences in rates of hospital admission. Overall, the hospital admission rate per 1,000 membership years for Blue Cross/Blue Shield was 121 cases and 69 cases for GHA. These differences held even after correction for small demographic differences. An examination of diagnostic-specific admission rates indicated that in 39 of the 46 diagnostic categories, the Blue Cross/Blue Shield rate was significantly higher than the GHA rate. In only one category (wounds and burns) was the GHA rate greater. Categories with the greatest differences, which could not be attributed to differences in the benefit structure, were disorders of menstruation, acute respiratory infections, and hypertrophy of tonsils and adenoids and chronic tonsillitis.

Differences in length of stay between members of the two plans were of a smaller magnitude than those found for hospital admission rates. But there were substantial differences in patient-day rate between the two plans. Overall, for Blue Cross/Blue Shield there were 724 patient-days per 1,000 membership years; for GHA it was 383. The general patterns of differences by age, sex, and type of contract found for hospital admission rates were also found for patient-day rates.

Using the same data base, Meyers, et al. (180), examined ambulatory medical use by Blue Cross/Blue Shield and GHA. The authors concluded that any assumed "substitution" of ambulatory care for inpatient services, as an explanation of the generally lower rate of hospitalization among prepaid group practice members, could not be empirically found.

This same study also identified several interesting and statistically significant patterns when the dominant difference between the two plans, the racial distribution of their membership, was controlled (180). A higher proportion of the prepaid group members made contact with the care system and used a higher volume of services, regardless of race. And while blacks generally used services less than whites in both plans, blacks in the prepaid plan had a higher volume of emergency visits and ambulance trips than did whites. Among blacks, a higher proportion in the prepaid group made contact with the care system, but the volume of use in terms of mean numbers of contacts was similar to that for blacks in the fee-for-service plan, whereas the reverse was true for whites in both plans (54).

Another study by Blumberg (20) used data from the 1975 National Health Interview Survey for California residents under age 65. A small part of the work examined plan selection for those covered by FEHBP or the California employees system, which has some similarities to FEHBP. The FEHBP-California sample was restricted to 697 individuals. Results indicate that 32 percent chose a prepaid group practice.* Compared with the rest, prepaid group practice enrollees were more likely to have a limitation in their usual activity and to indicate fair or poor health status. However, they experienced fewer restricted activity days. Prepaid group practice enrollees in this study were found to have a lower rate of hospital utilization as well. For prepaid group enrollees overall, there were 364 patient-days per 1,000 person-years; for other private coverage plans the aggregate number was 582.

The studies reviewed in this section, while varying in methodological rigor, are consistent in asserting that hospital utilization rates in FEHBP have been generally less for enrollees in prepaid group practices than for other general types of plans, especially the service benefit plan (Blue Cross/Blue Shield). The Riedel (227) and Blumberg (20) studies, while limited to a small number of sites, also provide little support for the view that prepaid group practice plans enroll healthier individuals.

Low- v. High-Option Plans*

The Blue Cross and Blue Shield Associations suggest that the FEHBP structure results in adverse selection (19). Citing analyses using data from their plans, they note that the actuarial values of the high-option plan are substantially less than double those of the low-option plan, while claims costs and premiums of the high-option plan are more than double. In the absence of adverse selection, similar differentials between actuarial values and premiums would be expected in each plan. Given the discrepancy, Blue Cross/Blue Shield concludes that the low- and high-option enrollees are not equivalent, with the high-option plan drawing a population more likely to use services.

Available data tend to support the Blue Cross/Blue Shield conclusions based on the experience for the Government-wide carriers. Tables C-5 through C-9 present data on the age and sex distribution of enrollees and claimants in high- and low-option Blue Cross/Blue Shield and Aetna plans. Enrollment data profile the 1980 age and sex distribution of contract holders only (not dependents) and were provided by the individual plans. The claimant data are based on those who filed claims for services received in 1979 and include statistics on the total billed expenditures as well as age and sex distribution of those making claims. The claimant data were obtained from data reported to OPM and are based on a sample of all claimants to the Blue Cross/Blue Shield and Aetna FEHBP plans. While less reliable than data on enrollment, the claimant data are of interest since they allow for a comparison of the medical care expenditures generated by high- and low-option enrollees controlled for age and sex.

Tables C-5 and C-6 show the age and sex distribution of contract-holders in the Blue Cross/Blue Shield FEHBP plan, distinguishing between employee (table C-5) and annuitant (table C-6) experience. These data indicate that the low-option plan draws individuals with a lower expected utilization of health services. Among employees, the proportion enrolled in high-option plans steadily increases with increasing age until age 65, where it drops—presumably because many employees become eligible for Medicare as a result of previous non-Federal employment. The high option tends to draw those involved in child-bearing (e.g., younger males with family contracts), while the low-option plan tends to draw single younger males. The annuitant data (table C-6) also show that selection of high-option coverage increases with age and health circumstances. The most striking thing about these data is the heavy enrollment of the potentially disabled, sick, high-utilizer annuitants under aged 65 in the high-option plans.

The Aetna enrollment data include a smaller population. Hence, estimates on enrollment differences in age and sex mix of the low- and high-option plans may be unstable. Also, the Aetna data, unlike the Blue Cross/Blue Shield data, do not distinguish between individual and family contacts. Nonetheless, the Aetna enrollment data presented in table C-7 tend to confirm the major trends in enrollment shown in the Blue Cross/Blue Shield data. For both employees and annuitants, there is a precipitous drop in the proportion enrolled in high-option plans at age 65. Unlike Blue Cross/Blue Shield, however, the Aetna enrollees are not so heavily concentrated in the high-option plans and the Aetna low-option plan comprises a larger share of the total Aetna market.

Claimant data tend to parallel those for enrollees. Tables C-8 and C-9 profile the age and sex distribution of claimants in the Blue Cross/Blue Shield and Aetna plans, respectively. Because Blue Cross/Blue Shield FEHBP has expressed some reservations about the quality of the reported data which they draw from

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*It should be noted that Blumberg (20) made a distinction in this study between prepaid group practices and individual practice associations, choosing to include the latter category with "other private coverage plans."

*The remainder of this section is drawn from Marsha Gold, "Competition Within the Federal Employees Health Benefits Program: Analysis of the Empirical Evidence," unpublished, November 1981 (106).

Table C-5.—Blue Cross/Blue Shield FEHBP Contract Holders by Plan, Option, Age, and Sex: Active Employee Contracts, 1980

	Individual plan				Family plan			
	Male		Female		Male		Female	
Option and age	Number	Percent	Number	Percent	Number	Percent	Number	Percent
High option:								
Under 20	388	0.3	2,004	1.2	227	0.0	338	0.2
20-24	9,568	7.9	19,308	11.1	4,848	1.0	7,402	5.3
25-29	24,589	20.3	28,299	16.3	33,210	6.7	19,357	13.9
30-34	24.890	20.6	24,194	13.9	72,578	14.6	25,852	18.5
35-39	14,029	11.6	15,299	8.8	65,263	13.1	20,972	15.0
40-44	8,975	7.4	11,737	6.8	62,219	12.5	17,263	12.4
45-49	9,060	7.5	13,712	7.9	73,850	14.9	15,050	10.8
50-54	11,410	9.4	18,814	10.8	79,483	16.0	14,271	10.2
55-59	10,095	8.3	22,090	12.7	63,935	12.9	12,483	8.9
60-64	5,504	4.5	13,203	7.6	31,300	6.3	5,225	3.7
65 and over	2,599	2.1	5,138	3.0	10,265	2.1	1,434	1.0
Total	121,008	—	173,798	—	497,178	—	139,647	—
Low option:								
Under 20	158	0.5	789	2.8	27	0.0	108	0.3
20-24	4,682	14.7	6,913	24.2	1,209	1.6	2,387	7.0
25-29	9,607	30.2	7,009	24.4	6,796	8.9	5,546	16.2
30-34	7,465	23.5	3,915	13.7	11,768	15.3	6,278	18.3
35-39	3,061	9.6	1,961	6.9	9,546	12.4	4,839	14.1
40-44	1,620	5.1	1,308	4.6	10,177	13.3	4,347	12.7
45-49	1,469	4.6	1,301	4.5	12,283	16.0	3,784	11.1
50-54	1,495	4.7	1,659	5.8	11,360	14.8	3,059	8.9
55-59	1,185	3.7	1,856	6.5	7,818	10.2	2,516	7.3
60-64	572	1.8	961	3.4	4,031	5.3	913	2.7
65 and over	498	1.6	942	3.3	1,709	2.2	458	1.3
Total	31,812	—	28,617	—	76,724	—	34,235	—
Ratio: high to low option:								
Under 20		2.5		2.5		8.4		3.1
20-24		2.0		2.8		4.0		3.1
25-29		2.6		4.0		4.9		3.5
30-34		3.3		6.2		6.2		4.1
35-39		4.6		7.8		6.8		4.3
40-44		5.5		9.0		6.1		4.0
45-49		6.2		10.5		6.0		4.0
50-54		7.6		11.3		7.0		4.7
55-59		8.5		11.9		8.2		5.0
60-64		9.6		13.7		7.8		5.7
65 and over		4.5		5.5		6.0		3.1
Total		3.8		6.1		6.5		4.1

SOURCE: M. Gold, "Competition Within the Federal Employees Health Benefits Program: Analysis of the Empirical Evidence," unpublished draft staff paper, Office of Assistant Secretary for Planning and Evaluation, Department of Health and Human Services, Washington, D.C., November 1981.

a 5-percent sample merging several data sources, the focus will be on the Aetna experience (table C-9).

Data on expenditures are of greater interest. In general, they show that the total submitted expenditures for high-option enrollees tend to be greater than those for low-option enrollees. On average, the low-option plan claimants incur fewer claims even when age and sex are controlled. The patterns probably result from a combination of several factors, including differences in rates of claims submission based on coverage differentials and lowered utilization resulting from less coverage in the low-option plan. A selection preference for high-option plans based on health status, independent of age and sex, also appears likely.

Choices by Annuitants and the Elderly in FEHBP

FEHBP includes both employees and annuitants, some of whom may also be eligible for Medicare. Annuitants include disabled individuals, survivors of deceased Federal employees, and retired individuals of various ages. As a group, annuitants are older and less healthy than employees. Their high utilization should

Table C-6.—Blue Cross/Blue Shield FEHBP by Plan, Option, Age, and Sex: Annuitant Contracts, 1980

	Individual plan				Family plan			
	Male		Female		Male		Female	
Option and age	Number	Percent	Number	Percent	Number	Percent	Number	Percent
High option:								
Under 20	432	0.6	401	0.2	684	0.2	615	1.5
20-24	292	0.4	373	0.2	157	0.1	150	0.4
25-29	222	0.3	216	0.1	188	0.1	260	0.6
30-34	370	0.5	373	0.2	1,017	0.4	786	1.9
35-39	444	0.6	453	0.2	1,899	0.7	1,338	3.3
40-44	560	0.8	794	0.4	3,271	1.1	2,316	5.7
45-49	1,087	1.5	2,246	1.2	7,133	2.5	3,696	9.1
50-54	3,141	4.3	8,114	4.3	16,887	5.9	5,988	14.8
55-59	11,088	15.2	24,320	12.8	62,382	21.7	8,471	21.0
60-64	16,814	23.0	38,886	20.4	82,063	28.5	8,024	19.8
65 and over	38,580	52.8	114,006	59.9	111,947	38.9	8,783	21.7
Total	73,030	—	190,183	—	287,628	—	40,427	—
Low option:								
Under 20	80	0.4	82	0.2	111	0.2	109	1.2
20-24	56	0.3	47	0.1	33	0.1	22	0.2
25-29	37	0.2	36	0.1	17	0.0	27	0.3
30-34	52	0.3	34	0.1	95	0.1	73	0.8
35-39	59	0.4	39	0.1	192	0.3	142	1.5
40-44	61	0.4	64	0.1	315	0.5	264	2.8
45-49	141	0.9	209	0.4	841	1.3	436	4.7
50-54	343	2.1	683	1.3	2,025	3.1	671	7.2
55-59	997	6.1	1,788	3.4	6,986	10.8	1,041	11.2
60-64	1,363	8.3	2,794	5.3	9,779	15.2	1,052	11.3
65 and over	13,163	80.5	47,077	89.1	44,016	68.3	5,498	58.9
Total	16,352	—	52,854	—	64,410	—	9,335	—
Ratio: high to low option:								
Under 20		5.4		4.9		6.2		5.6
20-24		5.2		7.8		4.8		6.8
25-29		6.0		6.0		11.1		9.6
30-34		7.1		11.0		10.7		10.8
35-39		7.5		11.6		9.9		9.4
40-44		9.2		12.4		10.4		8.8
45-49		7.7		10.7		8.5		8.5
50-54		9.2		11.9		8.3		8.9
55-59		11.1		13.6		8.9		8.1
60-64		12.3		13.9		8.4		7.6
65 and over		2.9		2.4		2.5		1.6
Total		4.5		3.6		4.5		4.3

SOURCE: M. Gold, "Competition Within the Federal Employees Health Benefits Program: Analysis of the Empirical Evidence," unpublished draft staff paper, Office of Assistant Secretary for Planning and Evaluation, Department of Health and Human Services, Washington, D.C., November 1981.

drive up the premiums of those plans in which they are most heavily represented. Premium increases are partially offset, to the extent that the annuitants also have Medicare coverage which pays for a large proportion of their bills. Similar considerations apply for the elderly, most of whom are annuitants.

Annuitants represent about one-third of all high-option contract holders with particular concentration in the Government-wide plans. They represent 39 percent and 51 percent, respectively, of the high-option Blue Cross/Blue Shield and Aetna enrollment, and about a fifth of the enrollment in employee and HMOs plans (198). Overall, annuitants represent about half of the low-option plan enrollment.

Since almost three-quarters of all low-option enrollees are in the Blue Cross/Blue Shield plan, the experience of this plan provides a good indication of the choices annuitants are making. Enrollment data from Blue Cross/Blue Shield (see tables C-5 and C-6) indicate that annuitants represent about 45 percent of the low-option enrollment and 39 percent of the high-option enrollment. The high-option annuitant enrollees tend to be split about evenly between those under age 65 and those 65 and older, with the latter more likely

Table C-7.—Aetna FEHBP Contract Holders by Option, Age, and Sex: Active Employee and Annuitant Contracts, 1980

	Employee contracts				Annuitant contracts			
	Male		Female		Male		Female	
Option and age	Number	Percent	Number	Percent	Number	Percent	Number	Percent
High option:								
Under 20	112	0.1	281	0.5	192	0.2	269	0.4
20-24	1,920	1.6	3,574	6.5	106	0.1	128	0.2
25-29	8,651	7.0	6,965	12.7	61	0.1	144	0.2
30-34	15,860	12.9	7,919	14.4	132	0.1	144	0.2
35-39	15,228	12.3	6,595	12.0	237	0.2	255	0.4
40-44	15,811	12.8	5,650	10.3	499	0.5	547	0.8
45-49	19,456	15.8	5,317	9.7	1,268	1.2	1,141	1.6
50-54	19,785	16.0	6,278	11.4	3,955	3.8	2,908	4.0
55-59	15,671	12.7	6,762	12.3	16,714	16.0	8,014	11.0
60-64	7,681	6.2	3,787	6.9	25,491	24.4	13,232	18.2
65 and over	3,210	2.6	1,873	3.4	55,960	53.4	46,028	63.3
Total	123,385	100.0	55,001	100.1	104,615	99.8	72,746	100.2
Low option:								
Under 20	46	0.1	107	0.7	73	0.2	80	0.3
20-24	832	2.4	1,182	8.1	3	0.1	30	0.1
25-29	2,816	8.1	2,073	14.1	17	0.0	27	0.1
30-34	4,720	13.6	2,181	14.9	48	0.1	42	0.1
35-39	4,838	13.9	1,695	11.6	94	0.2	69	0.2
40-44	4,917	14.2	1,507	10.3	149	0.4	129	0.4
45-49	5,385	15.5	1,483	10.1	341	0.9	271	0.9
50-54	4,996	14.4	1,520	10.4	1,069	2.7	602	2.1
55-59	3,539	10.2	1,557	10.6	3,877	9.9	1,405	4.8
60-64	1,790	5.1	758	5.4	5,973	15.2	2,108	7.2
65 and over	879	2.5	596	4.1	27,493	70.2	24,493	83.7
Total	34,758	99.9	14,659	100.3	39,172	99.9	29,256	83.7
Ratio: high to low option:								
Under 20		2.43		2.63		2.63		3.36
20-24		2.31		3.02		2.79		4.27
25-29		3.07		3.36		3.59		2.96
30-34		3.36		3.63		2.75		3.42
35-39		3.15		3.89		2.52		3.70
40-44		3.22		3.75		3.35		4.24
45-49		3.61		3.59		3.72		4.21
50-54		3.96		4.34		3.70		4.83
55-59		4.43		5.00		4.31		5.70
60-64		4.29		5.00		4.27		6.28
65 and over		3.65		3.14		2.03		1.88
Total		3.55		3.75		2.67		2.49

SOURCE: M. Gold, "Competition Within the Federal Employees Health Benefits Program: Analysis of the Empirical Evidence," unpublished draft staff paper, Office of Assistant Secretary for Planning and Evaluation, Department of Health and Human Services, Washington, D.C., November 1981.

to be covered by Medicare. In contrast, more than three-quarters of those in the low-option group are 65 or older.

These data are interesting insofar as they may indicate a tendency for the elderly to choose high-option plans even when potentially duplicative Medicare coverage may be available. Although the elderly with Medicare coverage tend more to select low-option plans, a substantial proportion of the elderly elect to enroll in high-option plans. The extensive selection of high-option benefits by those with potentially duplicate benefits suggests that in addition to likely expenditure and need for coverage, the choice of health insurance plans also may reflect considerable risk aversion and fear of uncovered expense.

Blue Cross/Blue Shield High-Option Plan Enrollees

The Blue Cross/Blue Shield high-option plan provides coverage for a substantial proportion of the FEHBP enrollment. While its market share has declined in recent years, this plan still constituted almost half of the 1980 FEHBP enrollment. Because of its domi-

Table C-8.—Blue Cross/Blue Shield FEHBP Enrollees Who Received Benefits by Plan, Option, Age, and Sex, 1979 (5 percent sample data)

	Male						Female					
	Claimants						Claimants					
	Number		Percent		Expense/Claimant		Number		Percent		Expense/Claimant	
Option and age	Individual	Family	Individual	Family	Individual	Family	Individual	Family	Individual	Family	Individual	Family
High option:												
Under 25	241	590	4.8	2.5	427	215	702	487	6.1	7.5	574	659
25-29	565	938	11.2	3.9	987	468	909	808	7.9	12.5	804	974
30-34	527	1,811	10.4	7.6	784	518	764	870	6.6	13.4	1,164	1,054
35-39	332	1,778	6.6	7.5	1,017	577	441	724	3.8	11.2	1,062	1,013
40-44	227	1,722	4.5	7.2	1,127	683	347	597	3.0	9.2	1.121	980
45-49	265	2,343	5.2	9.8	1,216	1,015	502	644	4.3	9.9	1,105	1,082
50-54	397	2,957	7.8	12.4	1,249	1,002	875	691	7.6	10.6	1,213	1,072
55-59	607	3,944	12.0	16.5	1,831	1,267	1,440	728	12.5	11.2	1,143	1,152
60-64	624	3,362	12.3	14.1	1,584	1,487	1,641	462	14.2	7.1	1,509	992
65+ Medicare	651	2,051	12.9	8.6	2,818	2,521	2,334	264	20.2	4.1	2,157	1,746
65+ No Medicare	622	2,364	12.3	9.9	1,934	1,327	1,597	214	13.8	3.3	1,233	907
Total	5,058	23,860	—	—	1,507	1,146	11,552	6,489	—	—	1,352	1,038
Low option:												
Under 25	79	61	9.3	2.0	56	258	158	65	7.6	7.7	379	854
25-29	126	105	14.9	3.4	531	401	158	153	7.6	13.8	645	769
30-34	87	178	10.3	5.7	328	359	73	119	3.5	10.7	694	798
35-39	50	185	5.9	5.9	428	456	36	110	1.7	9.9	833	892
40-44	21	166	2.5	5.3	1,010	713	35	103	1.7	9.3	1,057	891
45-49	25	208	2.9	6.7	644	605	30	87	1.4	7.8	578	798
50-54	25	239	2.9	7.7	975	1,244	43	84	2.1	7.6	635	960
55-59	25	311	2.9	10.0	1,804	919	73	85	3.5	7.7	1,087	643
60-64	25	245	2.9	7.9	473	1,135	69	58	3.3	5.2	1,037	1,237
65+ Medicare	314	1,114	37.0	35.8	1,774	1,943	1,190	185	57.4	16.7	1,595	1,124
65+ No Medicare	71	299	.8.4	9.6	319	533	207	41	10.0	3.7	311	863
Total	848	3,111	—	—	1,014	1,169	2,072	1,110	—	—	1,176	894
Ratio: high to low option:												
Under 25	3.05	9.68	.52	1.25	7.63	.83	4.44	5.73	.80	.97	1.51	.77
25-29	4.48	8.93	.75	1.15	1.86	1.17	5.75	5.28	1.04	.91	1.25	1.27
30-34	6.06	10.17	1.01	1.33	2.39	1.44	10.47	7.31	1.89	1.25	1.68	1.32
35-39	6.64	9.61	1.12	1.27	2.38	1.27	12.25	6.58	2.24	1.13	1.27	1.14
40-44	10.81	10.37	1.80	1.36	1.12	.96	9.91	5.78	1.76	.99	1.06	1.10
45-49	10.60	11.26	1.79	1.46	1.89	1.68	16.73	7.40	3.07	1.27	1.91	1.36
50-54	15.88	12.37	2.69	1.61	1.28	.81	20.35	8.23	3.62	1.39	1.91	1.12
55-59	24.28	12.68	4.14	1.65	1.01	1.38	19.73	8.56	3.57	1.45	1.05	1.79
60-64	24.28	13.72	4.24	1.78	3.35	1.31	23.78	7.97	4.30	1.37	1.46	.80
65+ Medicare	2.07	1.84	.35	.24	1.59	1.30	1.96	1.43	.35	.25	1.35	1.55
65+ No Medicare	8.76	7.91	1.46	1.03	6.06	2.49	7.71	5.22	1.38	.89	3.96	1.05
Total	5.96	7.67	—	—	1.49	.98	5.58	5.85	—	—	1.15	1.16

SOURCE: M. Gold, "Competition Within the Federal Employees Health Benefits Program: Analysis of the Empirical Evidence," unpublished draft staff paper, Office of Assistant Secretary for Planning and Evaluation, Department of Health and Human Services, Washington, D.C., November 1981.

nant role, it is important to analyze the available evidence on issues of selection as they bear on the long-range prospects for plans such as this one in a competitive system.

Blue Cross/Blue Shield staff are concerned that adverse selection within FEHBP has led to increasingly high premium rates for the plan (19). They suggest that competition will lead to "cream-skimming," resulting in adverse selection which makes some comprehensive high-option plans residuals for the sick and otherwise unattractive enrollee, eventually driving these plans out of business. As evidence for this, they cite the utilization experience of their high-option enrollees in 1976. The 1976 expenditures for those who joined in open season that year were 29 to 44 percent above average for high-option enrollees; expenditures for those who left at the end of that year were 28 to 38 percent below average. Analysts conclude that a continuation of these patterns over time will lead to increasingly high rates that will encourage lower utilizers to leave the plan.

Congressional Budget Office (CBO) staff analyzed this issue in the course of undertaking related research (104). Ginsburg cites work by Koretz indicating that those leaving the Blue Cross/Blue Shield high-option plan at the end of 1977 had claims 39 percent below average, or 35 percent below average when mental health claims were excluded. Ginsburg suggests that better mental health benefits and higher hospital use rates, especially for maternity, were only some of the factors involved in the selection effects.

Table C-9.—Aetna FEHBP Enrollees Who Received Benefits by Option, Age, and Sex: Total Across Individual and Family Plans, 1979 (sample data)

	Male			Female		
	Claimants			Claimants		
Option and age	Number	Percent	Expense per claimant	Number	Percent	Expense per claimant
High option:						
Under 25	42	0.43	$ 607	150	2.44	$1,209
25-29	223	2.29	821	290	4.73	1,128
30-34	392	4.03	762	330	5.38	1,207
35-39	453	4.66	707	247	4.02	1,003
40-44	554	5.70	1,024	219	3.57	1,331
45-49	726	7.47	1,170	281	4.58	1,494
50-54	1,013	10.42	1,599	474	7.72	1,545
55-59	1,499	15.42	1,744	764	12.45	1,741
60-64	1,598	16.44	1,963	894	14.57	1,555
≥ 65 Medicare	1,714	17.63	3,472	1,505	24.52	2,496
≥ 65 No Medicare	1,509	15.52	1,902	983	16.02	1,561
Total	9,723	100.01	$1,896	6,137	100.00	$1,729
Low option:						
Under 25	18	0.62	$ 769	32	1.68	$ 873
25-29	71	2.46	576	92	4.83	1,061
30-34	108	3.74	681	62	3.26	935
35-39	149	5.16	604	61	3.20	957
40-44	122	4.22	699	46	2.41	1,602
45-49	177	6.13	873	67	3.52	1,388
50-54	217	7.51	1,634	79	4.14	1,410
55-59	284	9.83	1,334	130	6.82	1,127
60-64	303	10.49	1,793	119	6.24	1,263
≥ 65 Medicare	1,094	37.87	2,482	993	52.10	2,129
≥ 65 No Medicare	346	11.98	940	225	11.80	791
Total	2,889	100.01	$1,653	1,906	100.00	$1,631
Ratio: high to low option:						
Under 25	2.33	.69	.79	4.69	1.45	1.38
25-29	3.14	.93	1.43	3.15	.98	1.06
30-34	3.63	1.08	1.12	5.32	1.65	1.29
35-39	3.04	.90	1.17	4.05	1.26	1.05
40-44	4.54	1.35	1.46	4.76	1.48	.83
45-49	4.10	1.22	1.34	4.19	1.30	1.08
50-54	4.69	1.40	.98	6.00	1.86	1.10
55-59	5.28	1.57	1.31	5.88	1.83	1.54
60-64	5.27	1.57	1.09	7.51	2.33	1.23
≥ 65 Medicare	1.57	.47	1.40	1.52	.47	1.17
≥ 65 No Medicare	4.36	1.30	2.02	4.37	1.36	1.97
Total	3.37	1.00	1.15	3.22	1.00	1.06

SOURCE: Data submitted to the U.S. Office of Personnel Management; as quoted in M. Gold, "Competition Within the Federal Employees Health Benefits Program: Analysis of the Empirical Evidence," unpublished draft staff paper, Office of Assistant Secretary for Planning and Evaluation, Department of Health and Human Services, Washington, D.C., November 1981.

The Blue Cross/Blue Shield and CBO analyses agree that expenditures are lower for those leaving the plan, but they disagree on the expenditures for joiners. Sampling, methodology, and data source factors do not appear sufficient to account for the differences in the two analyses. The discrepancy in results may be attributable to the different years considered in the two analysis, however. Around 1976, Aetna dropped its mental health benefit, while the Blue Cross/Blue Shield plan retained an extensive one. Perhaps more importantly, 1976 also was the year of a major rate increase of 35 to 40 percent for the Blue Shield plan (see fig. C-2). As discussed previously, this led to a substantial decline in Blue Cross/Blue Shield enrollment.

Blue Cross/Blue Shield and CBO also disagree on the magnitude of the adverse selection problem and its importance in a competitive environment. To consider this point, it is useful to review data on the age and sex distribution of the Blue Cross/Blue Shield enrollment between 1975 and 1980. Trends in these data are summarized in table C-10.

The data show that enrollment in the Blue Cross/Blue Shield high-option plan is growing increasingly older. The most substantial shift occurred through a

Table C-10.—Blue Cross/Blue Shield FEHBP Enrollment, by Age and Contract Type: High-Option Contract Holders, 1975-80

	December 1975				December 1980				Net changes, December 1975-80			
	Individual		Family		Individual		Family		Individual		Family	
Age	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Under 35	167,510	31.5	294,853	24.3	135,920	24.3	166,492	17.3	−31,590	−7.2	−128,361	−7.0
35-44	43,510	31.5	244,995	20.2	52,292	9.4	174,541	18.1	+8,393	+1.1	−70,454	−2.1
45-64	211,226	39.8	580,953	47.8	209,584	37.5	490,241	50.9	−7,642	−2.3	−90,712	−3.0
65 and older	108,289	20.4	94,140	7.7	160,323	28.7	132,429	13.7	+52,034	+8.3	+38,289	+6.0
Total	530,924	100.0	1,214,941	100.0	558,119	99.9	964,880	99.9	−27,195		−250,061	

SOURCES: Blue Cross/Blue Shield internal data; M. Gold, "Competition Within the Federal Employees Health Benefits Program: Analysis of the Empirical Evidence," upublished draft staff paper, Office of Assistant Secretary for Planning and Evaluation, Department of Health and Human Services, Washington, D.C., November 1981.

large absolute drop of roughly 7 percent in the enrollment by those under 35 years at the same time as there has occurred an equivalent increase of 6 to 8 percent in the enrollment by the elderly. Because comparable data are not available for the entire FEHBP enrollment, it is not possible to determine the extent to which these patterns reflect shifts in Federal employment and annuitant composition. However, labor force changes of this magnitude are unlikely over a 5-year period. This would tend to suggest that the increasing age of the Blue Cross/Blue Shield enrollment reflects in part at least a selection effect which poses a potential threat to the viability of the plan.

This has certain obvious conclusions for the plan, but the implications from the larger policy perspective are less clear. Under increased competition, more attractive and efficient (i.e., more benefits and/or lower premiums) plans might be expected to grow in membership, while others should decrease. The drop in Blue Cross/Blue Shield membership, may or may not reflect such a phenomenon, resulting from increasing premium rates, the availability of alternative plans, and potential dissatisfaction with the service provided by the Blue Cross/Blue Shield plan. Such a response would reflect competition leading to the encouragement of more efficient plans responsive to enrollee demands.

Theoretically, such responses should occur across all age groups, without the major shifts evidenced in the Blue Cross/Blue Shield enrollment data. Shifts varying by age are a concern because they imply there may be some "cream-skimming" in the system. If so, increased competition may not promote more efficient plans, but rather plans with more successfully targeted marketing efforts. This form of competition would have little effect on the total costs of health care, since its impact would be to shift costs around but not reduce overall expenditures.

The available information suggests that reported trends in Blue Cross/Blue Shield enrollment may reflect more than "cream-skimming." The drop in enrollment for the Blue Cross/Blue Shield plan has been more acute since 1975, the year of the large premium increase. Other data from consumer surveys indicate that customer service ratings for the Government-wide plans fall below that for several other plans (91). FEHBP enrollees may be reacting to these circumstances.

Blue Cross/Blue Shield experience also may provide a lesson on the actual method by which competition among insurance plans may operate. It is possible that the age shift in Blue Cross/Blue Shield enrollment may reflect on the types of individuals likely to respond first or faster in a competitive environment. Those whose expected health expenditures are low face less risk in switching plans. Because their costs are likely to be low in any case, they have "less to lose" if their choice turns out wrong and the coverage is poor, incomplete, or not satisfactory.

The potential risk for older or less healthy individuals is higher, as it is for those who will need care (e.g., those expecting to use maternity benefits, psychiatric care). In addition, those who are older have a potentially longer history with a single plan and may be hesitant to switch to a less familiar one. These considerations suggest that response to a competitive environment may vary with age, health status, and other related factors. If so, competition without adverse selection is unlikely, and it becomes necessary to trade off the two in determining both the form and the extent of competition to be promoted.

Quality Assurance

Few studies have looked at the quality assurance area of FEHBP. There is little evidence that OPM has ever perceived a need or rationale for institutionalizing for FEHBP a quality assurance policy analogous to the use of Professional Standards Review Organizations (PSROs) for the Medicare program. Instead, it seems, OPM has relied on the market mechanism—at least implicitly—and on existing quality assurance programs and regulatory agencies to monitor quality of care across plans.

When FEHBP was originally operationalized in 1959-60, the integrity of each eligible plan was reviewed, and previous plan performance was checked through State and local regulatory agencies, as well as through various other quality assurance organizations. As previously discussed, a minimum set of benefits under each plan had been set out by law.

CSC also delegated the contract management of a plan to the same person and/or office that was responsible for day-to-day administration of the plan. Combining these two tasks allowed enrollee feedback concerning problems or needed benefit improvements to be funneled directly into future contract negotiations with individual plans (120). The result has been not only a variety of basic plans, but also an evolution and intermixture within each of the basic types.

The Riedel, et al., study (227) on FEHBP utilization discussed earlier also touched on the quality assurance areas. Two findings of the study were that: 1) a larger percentage of GHA patients were admitted to teaching hospitals, reflecting the pattern of hospital appointments of physicians in the plans, and that 2) there were no large differences in the proportions of patients attended by physicians of various specialties in the two plans, although a somewhat greater percentage of GHA patients were cared for by physicians in practice a shorter length of time.

Using the Riedel, et al., data base, a followup survey by Koepsell, et al. (139), looked at appropriateness of hospital admission under a prepaid group plan and fee-for-service plan available to Federal employees in the Washington, D.C., area. Judgment on the medical appropriateness of admission was based on two sets of explicit, disease-specific criteria listing the clinical circumstances under which hospitalization is usually considered justified for each disease. One set was developed by the American Medical Association (AMA) to assist PSROs, and the second was developed by physicians in Hawaii for Payne and Lyons' episodes of illness study. Diagnostic validity was assessed on the basis of AMA criteria developed under the same auspices as their admission criteria.

While the authors admit to a certain inherent "grey zone" of clinical situations, they found few medically inappropriate admissions in either plan and few inaccurate diagnoses by the time of discharge in either plan (139). The one statistically significant difference found in the study was that more fee-for-service patients underwent both tonsillectomy and adenoidectomy rather than one procedure only. Thus, somewhat more extensive surgery was performed under the fee-for-service plan.

Information Dissemination and Consumer Choice

According to microeconomic theory, consumers act rationally in market situations. Accordingly, when provided with the opportunity to make a selection among health care plans, consumers will seek information and maximize their welfare. (Some economists assert that one need not assume that all consumers exhibit this rational behavior, and that it is sufficient if some consumers act rationally; these more sophisticated consumers would be able to affect the market structure and all consumers would benefit (1).)

One of the oldest if not the best example of a multiple consumer-choice health plan system is FEHBP. And one of OPM's responsibilities under the program is to assure that employees receive sufficient information about it and the various health plans for which they are eligible.

This responsibility is stated in the Federal Employees Health Benefits Act, as amended, as follows (U.S. Code, Health Insurance, ch. 89, title 5, pt. 890, Federal Employees Health Regulations):

> *Information to employees.*
>
> (a) The Civil Service Commission shall make available to each employee eligible to enroll in a health benefits plan under this chapter such information, *in a form* acceptable to the Commission after consultation with the carrier, as may be necessary to *enable the employee to exercise an informed choice* among the types of plans described by section 8903 of this title.
>
> (b) Each employee enrolled in a health benefits plan shall be issued an appropriate document setting forth or summarizing the—
>
> (1) services or benefits, including maximums, limitations, and exclusions, to which the employee or the employee and members of his family are entitled thereunder;
>
> (2) procedure for obtaining benefits; and
>
> (3) principal provisions of the plan affecting the employee or members of his family. [Emphasis added.]

OPM is to provide information on the various health plans each year before the "open season." Most evidence, though, seems to indicate that the program has been marked by limited availability of information and lack of consistent information on all of its plans for most of its history.

Since inception of the program in 1960, CSC/OPM has (until very recently) relied almost solely on individual brochures to provide information about the program and the various health plans—one brochure for each health plan and one brochure containing instructions on how to change options during open season (102). Typically, CSC/OPM would distribute the brochures to agency personnel centers, but distribution beyond that point depended on individual agency policies. Information on individual plans has been left to employee initiative in many instances. Brochures on employee organization plans for which all employees are eligible have generally not been distributed each open season, with employees having to specially request these brochures.

The brochure containing information to consider in choosing a health plan and the brochure describing FEHBP have generally been distributed on a one-time basis, usually at the time of hiring by the Government. In the mid-1970's, a General Accounting Office (GAO) study found that during an open season, the average employee received only about 4 of the 11 brochures needed to consider just the 7 plans for which all employees were eligible (102).

Prepaid gorups plans have been particularly vocal in stating that FEHBP dissemination policies have tended to favor the most popular plans. Kaiser Foundation went so far for several years as to distribute brochures on their plans themselves, directly to eligible employees, instead of through CSC/OPM (81).

Even assuming that an employee obtained all the needed informational and health plan benefit brochures, the different format of each brochure and the obscure and technical language in the brochures hindered ready comparisons of the benefits of the plans (102). As a 1970 CSC study regarding the feasibility of summary comparisons of health benefit plans stated (102):

> The brochures, as they are presently designed, lack reasonably uniform formats and do not adequately facilitate an 'informed choice' among the plans.
>
> This was not always true. The brochures followed a reasonably standard outline and format in 1960. At that time, making the brochures as uniform as possible to facilitate comparison was just as important a goal to the Commission as making the brochures precise enough to show the employee's rights under the contract. All brochures used the same style and size of print to describe limitations and exclusions as well as benefits and contained a page entitled 'Benefits in Brief' which facilitated gross comparison with other available plans. Each had a table of contents so that a specific provision could easily be located in a particular brochure and compared with that in another brochure. This requirement of reasonable standardization benefited Federal employees in several ways:
>
>> "Sales pitches were forbidden—and so was the 'fine print' and 'silent treatment' of undesirable features typical of many plan descriptions. As the plans were *laid out in standard outline and format,* under these strict (and, for many carriers, unusual) standards, carrier after carrier went back to reconsider its proposed benefits. Every contract, without exception, was revised in this process. Some contracts were actually changed after the brochures had gone to press, usually in the direction of liberalization benefits, always *in the direction of greater clarity*." [Emphasis added.]
>
> Because of the variation in the philosophies and benefit structures of the health plans, it was impossible to force each plan into precisely the same format . . . .
>
> Although these differences made a precisely uniform format infeasible, the formats of the brochures were kept similar to the extent possible. This is not the case since that time. Since 1961, the Commission has by choice allowed the brochures to become increasingly dissimilar so that today they contain numerous inconsistencies which cannot be explained by differences in the plans' benefit structures.

The 1970 report also stated that although CSC could recommend that an employee read the brochure of interest and compare it with other brochures, this task was time-consuming, tedious, and often frustrating. Brochures presented so many details that many Federal employees shied away from, or failed in, attempts at making careful comparisons of the plans. Employees became confused and ended up choosing a plan merely on the basis of a few major benefit provisions or as a friend's recommendation. As a result of the report, CSC moved to make the brochures more uniform (102).

Later, the Subcommittee on Retirement and Employment Benefits, House Committee on Post Office and Civil Service, again expressed concern about the information provided to Federal employees on available health plans. In House Report 93-1205, dated July 18, 1974, the subcommittee recommended that CSC better inform Federal employees about such health plans. The GAO study in 1976 recommended that CSC consolidate FEHBP health plan information brochures into publications which would enhance comparability among available plans, leading to increased informed choice (102).

In the most recent years, improved information has become available. For the 1980 open season, OPM made several changes in the informational material given to employees. Specifically, two new types of information were produced about health plan benefits consisting of: 1) columnar comparison charts for the benefits provided by each plan in the program, showing 17 major benefit categories; and 2) Health Plan Benefit Summaries describing each plan's major benefits in a uniform format on a single standard-size page (196).

In addition, OPM experimented in two geographic areas with special "summary booklets" containing summaries of all plans an employee could join in the area; i.e., containing summaries of local comprehensive plans as well as the summaries of the two Government-wide plans and 18 employee organization plans. This test was conducted to determine the feasibility of an alternative distribution system in conjunction with regional booklets (195).

Lastly, in a resurrection of an early 1960's FEHBP practice, training seminars for hundreds of other agency personnel working with health benefit matters were conducted. These training seminars took place in numerous locations (120,195).

A followup evaluation of the 1980 open season was conducted by OPM through a random survey in three sites—Philadelphia, Chicago, and southern California. Results indicated that the changes made and the new material produced were welcomed by all interested parties—carriers, agents, and employees—and served to generate new interest in the open season. But while the training seminars were successful, the single-sheet summaries and comparison charts were not. In particular, the majority of those who tried to use the comparison charts found use of the charts difficult if not impossible because of their large size, the number of sheets (up to four for each area of the country), and long narrative wording. Such analysis has allowed OPM to revise the information format for the next open season, which will have all Government plans in one standard-size booklet (28).

Preliminary cost figures show OPM's printing and distribution budget has remained about the same for the last 2 years, hovering near $1.3 million. Costs for the upcoming open season are anticipated to stay at that level as well (28,195).

In 1979, *Washington Consumer's Checkbook Magazine* also initiated publication of an annual guide to Federal plans for Washington, D.C., area employees with the advent of the open season. Unlike OPM materials, it: 1) was supported through private funds ($3.95 per pamphlet), and 2) drew conclusions about the consumer attractiveness of certain plans versus others. Specifically, cost, special features such as dental care, customer service, HMO comparability, and considerations for plan selection have all been categories of FEHBP plans scrutinized by the magazine.

Marketing of the guide has taken place through newspaper coverage, employee association stores, individual plans themselves, newsstands, bookstores, and a drug store chain. First-year sales in the Washington, D.C., area stood at 11,000 copies; second-year sales, with wider distribution and more active promotion, were double that number. The impact that this private consumer guide has had on FEHBP consumer choice is unknown. However, one plan favored by the guide, the Government Employees Health Association (GEHA), enjoyed a dramatic increase in enrollment in the Washington, D.C., area of over 120 percent (compared with less than 20 percent nationally) during the 1980 open season (145).

One last element of change over the last 3 to 4 years has been an apparent upswing in advertising of individual plans, initiated by the plans themselves. This has been particularly true of the employee organization plans. OPM originally prohibited advertising by the plans, but dropped the regulation in the late 1960's when it was felt all plans had become well enough established (120).

It is difficult to determine the impact of potentially limited information in past years on plan choice in FEHBP. Changes and improvements in available information over the last few years have, however, coincided with recent enrollment changes. For example, the number of employee transfers into different plans has increased from 107,000 in 1978 to 149,000 in 1979 and 159,000 in 1980 (198). As discussed in the section entitled "Competition Within FEHBP," there have also been relative changes in market shares by types of plans, especially over the last 5 years.

Still, there are signs that more steps may be needed to enhance consumer information and choice. The relative percentage of employees switching plans since 1960, for example, has changed little over the years, from the 3 to 4 percent range in the early years to a recent 6 to 7 percent range (28,120). And HMOs have been critical of the information OPM provides on plans and on the general way in which OPM conducts the open season. In testimony before a congressional subcommittee, Group Health Association of America (GHAA), the trade organization for group HMOs, argued that several provisions limit the ability of HMOs to effectively compete in the open season (113).

These include limitations on HMOs' ability to directly market to Federal employees; incomplete distribution of materials on HMO options; and inconsistent and uneven treatment of HMOs by OPM. In general, GHAA feels that OPM needs improved understanding of the structure of HMOs. GHAA also supports strongly a yearly open season combined with a positive enrollment procedure (i.e., all must indicate a preference even if no switch is involved) as a mechanism for enhancing the competitive posture of new or less widely known plans (106,113).

Current Problems of FEHBP

FEHBP has set many good precedents for designing a nationwide competitive health insurance system based on the principles of consumer choice, market incentives, and fair economic competition. Its main features—multiple choice, uniform dollar employer contributions, and open seasons—have been demonstrated to be workable. Yet there are some important structural flaws in FEHBP, which provided substantial difficulties by the end of 1981.

An open season, scheduled to begin on November 9, 1981, was indefinitely postponed by OPM 3 days prior to its commencement because of a host of problems. The announcement resulted from a confluence of four events: 1) a large escalation in health care costs during 1980 and 1981; 2) severe Federal budgetary constraints imposed by the Reagan administration; 3) assertions of an increasing extent of adverse selection in the Blue Cross/Blue Shield and Aetna high-option plans; and 4) numerous and substantial changes proposed by OPM in participating health plans premium rates, benefits, and deductible and coinsurance provisions at a late stage in the negotiations for the 1982 contract year.

During FEHBP's first 20 years, OPM's rules resulted in a stable underwriting environment. In recent years, carriers were generally prohibited from making substantial benefit reductions and were permitted to make benefit increases only if the total value of the entire benefit package did not materially change. Because benefit packages remained fairly constant from year to year, carriers were able to predict with reasonable accuracy what their future loss experience would be.

This stability was undermined in 1981 when, for the first time in FEHBP's history, OPM ordered all carriers to reduce 1982 benefits. In August, OPM directed all carriers (except for HMOs) to: 1) increase the deductible on supplemental benefits to $200 per individual, 2) increase the enrollee's coinsurance rate to 25 percent on supplemental benefits, and 3) apply a $200 deductible to outpatient hospital services, or 4) make other changes of equal value.

When OPM determined in October of 1981 that the August reductions were still inadequate to bring the cost of the program within its $2.25 billion congressional appropriation, it mandated a further 6.5 percent benefit reduction for all carriers including HMOs. Without these August and October cuts, the Government's contributions would have amounted to $2.69 billion.

These unprecedented benefit cuts, which included controversial drops in abortion coverage and an altering of mental health benefits, introduced a high degree of uncertainty into FEHBP. Both benefits and premiums would be significantly altered in the 1982 contract year. Moreover, because of the way in which the Government's contribution formula works, increases in enrollee contributions would be greater for high-cost plans than for low-cost plans. Accordingly, many predicted an exceptionally large number of enrollees would switch plans during open season. Since there was no way any carrier could predict the extent of enrollment changes, carriers faced substantial underwriting risks entering the 1982 contract year.

Consequently, nearly 100 carriers sued OPM to roll back some benefit reductions. A few carriers, such as Blue Cross/Blue Shield, fearing the large premium increase could cut enrollment and threaten their survival, sued OPM to cancel the November 1981 open season or to impose a "pre-existing health condition" limitation on all enrollment transfers. In addition, a number of mental health organizations sued OPM, Blue Cross/Blue Shield, and Aetna to prevent reductions in insurance coverage for mental health services (257). Faced with these problems, OPM proposed to delay the open season on an indefinite basis, on the grounds that it could not print and distribute brochures outlining benefit and planning changes in time.

In turn, some carriers then sued to prevent such a postponement. The lower court ruled that OPM acted illegally when it required a reduction in benefits for 1982 plans, and the court invalidated that cutback in benefits. The lower court also ruled that OPM acted illegally when it "indefinitely" postponed the open season for employees to choose health plans. It ordered that an open season be conducted, beginning no later than December 7, 1981. The Court of Appeals later granted a partial stay of that order. The appellate court ruled that open season would not take place for 30 days, or until the court decided whether the benefits cutback was legal, whichever came first.

As of the end of January 1982, the appellate court was still considering whether to order OPM to hold an open season. Regardless of the pending litigation, OPM went ahead with an issuance of new rates and benefits on December 31, 1981, that became immediately effective. The 1982 rates required nonpostal employees and annuitants to pay an average of 31 percent more for their share of the health insurance premium. Moreover, the benefit reductions generally resulted in added cost sharing for the enrollee (257).

In February 1982, the Court of Appeals upheld OPM's deferral, saying it had acted properly when it scrubbed the open season. Around the same time, OPM announced a new open season period had been scheduled for May 1982. It was subsequently held from May 3 to May 28.

For the future, OPM is considering a proposal that would scrap the complicated method the Government uses to arrive at percentage formula payments for insurance and instead give all workers and retirees the same dollar amount. As previously discussed, the Government's share of health premiums is based on 60 percent of the average high-option premium charged by six of the largest carriers in the Federal health program. Because of the averaging system, the actual dollar contribution (the maximum is slightly over $39 per pay period) varies depending on which plan the worker or retiree chooses. In some cases, it covers as little as 40 percent of the premium cost, while in others, it pays up to 75 percent.

The proposal being discussed at OPM would give every active-duty worker the same dollar amount to be applied to purchase of insurance. It would be enough to cover the entire premium for employees who chose inexpensive, low-option, minimum-benefit plans. Workers who wanted more protection could buy it, paying the difference out of their own pockets.

For retirees with potentially greater health needs but less money, OPM is considering a two-tier system that would give retired Government workers larger payments than active-duty workers.

The fixed-dollar payment plan is still under discussion. If the President approves it, Congress will have to approve the change. It could be part of a major package of health care cost reforms that the Reagan administration will propose later this year.

The idea would be to create more competition in the Nation's health insurance field by giving fixed payments to individuals, who could then shop around for the best insurance deal for themselves.

OPM would certify carriers for participation in the Federal health program but would no longer dictate rates or benefits (beyond a minimum package) the carriers offer. OPM officials say they would, however, insist that any carrier participating in the Federal health program offer group rates, to keep premiums as low as possible (36).

Appendix D.—Selected Regional Examples of the Effects of Alternative Delivery Systems

Rochester, N.Y.

The Rochester area has one of the lowest hospital utilization rates of any major metropolitan area in the country, around 560 days per 1,000 for the Blue Cross population (which is 85 percent of the market) in 1977. This rate has been steadily declining each year, a fact attributed by Blue Cross/Blue Shield members to health maintenance organization (HMO) competition in the area (132).

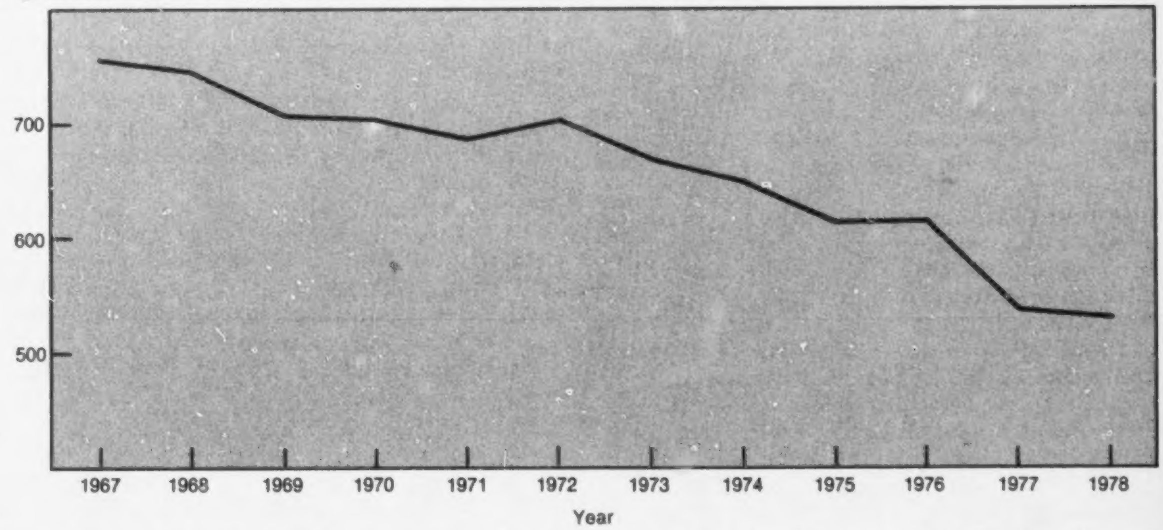
Blue Cross/Blue Shield dominates the insurance industry in Rochester and has been affiliated with all three HMOs that have operated in the area. The Blues have been significantly influenced in recent years by large corporations in Rochester (Eastman Kodak, Xerox, General Motors, and Sybron), who have encouraged cost containment efforts. These firms perceived the HMO as a method by which costs could be controlled; and they encouraged the Blues, which claimed a philosophical commitment to the HMO as an alternative, to create new HMOs (108).

Consequently, in 1973, three HMOs were started with the support of the local Blues. The Genesee Valley Group Health Association (GVGHA) is a multispecialty prepaid group practice modeled after the Kaiser-Permanente program. Enrollment in GVGHA has lagged somewhat behind projections, and break even was projected for 1981 with an enrollment of 41,000. A second plan, Rochester Health Network (RHN) developed a network of contracting neighborhood facilities in 1976, many of them originally part of the Office of Economic Opportunity's Neighborhood Health Center Program. Enrollment in 1979 in RHN was about 18,000, drawn primarily from lower income areas.

The third plan, Health Watch, an individual practice association (IPA), was sponsored by the Monroe County Medical Society. The plan involved 650 physicians, a majority of those in the area, and grew rapidly in the first 2 years, enjoying an enrollment of 24,000 by 1975. Health Watch experienced a rapid decrease in membership of its one large group, General Motors, after a 60-percent premium increase. By July 1976, the plan was out of business. A new IPA, the Rochester Area HMO, began operation in November 1979, with about 200 contracting physicians (163).

Figure D-1 presents the data for hospitalization by Blue Cross members under the age of 65. Two possible interpretations of this pattern of decline emerge: 1) the direction downward has been relatively continuous; or 2) the flat utilization rate of 1969-72 was

Figure D-1.—Rochester, N.Y. Blue Cross: Annual Hospital Days per 1,000 Persons, 1967-78 (under age 65 only)



SOURCE: H. S. Luft, S. C. Maerki, and J. D. Trauner, "The Competitive Effects of Health Maintenance Organizations: Another Look at the Evidence From Hawaii, Rochester, N.Y., and Minneapolis-St. Paul," presented at the American Public Health Association Annual Meeting, Los Angeles, October 1981.

followed by a marked decline from 1973 to 1978, during which HMO enrollment grew to 46,000.

The Finger Lakes Health Systems Agency concluded in 1980 that one of the factors contributing to the overall decline in hospital use "may well be the presence of alternative delivery systems." Other factors listed by the agency included: 1) successful efforts to control the number of hospital beds in the Rochester area (3.5 per 1,000 in contrast to the national average of 4.5), 2) more effective use and reimbursement of alternatives to hospital use such as home health care and ambulatory surgery, 3) indirect effects on physician hospital utilization practices from Professional Standards Review Organization (PSRO) review of Medicare/Medicaid hospitalization, and 4) "no-fault" reimbursement for some auto injury-related hospitalizations.

Because Rochester Blue/Cross-Blue Shield dominates the market in the area, overall hospital utilization rates should, it seems, reflect the Blues pattern of falling utilization rates. Instead, though, in contrast to a 12 percent Blues decrease, there is an overall increase of more than 11 percent. Luft, et al. (163), hypothesized that falling hospital use by Blue Cross enrollees stemmed from the fiscal crisis in New York that led to some major revisions in the State Medicaid program in 1976-77. In particular, Medicaid rates were frozen and the State attempted to shift certain costs onto the Medicare program by contesting eligibility. Both factors made it more difficult for hospitalized patients to be transferred to long-term care settings.

The Luft hypothesis is that these Medicare and Medicaid patients "backed-up" in acute hospitals and took beds that would otherwise have been used by under-age-65 Blue Cross enrollees. Coupled with an existing bed supply of only 3.5 per 1,000, the situation may have resulted in a change in the indications used for elective surgery or hospitalization, and so a consequential decline in admissions.

Because the relatively low Blue Cross/Blue Shield premium has been considered to be a major marketing obstacle for GVGHA, it is further unlikely that utilization rates fell in response to a competitive threat. The Blues have maintained premium rates at relatively constant levels over the past few years (163), and have had an added advantage in that community rates practically equal its enrolled population (because of its 85 percent market share). As the Blue Cross utilization rate drops each year, an HMO finds itself in a position of having to subsidize its premiums with other income in order to remain competitive. To its credit, GVGHA has lowered the amount of this subsidy almost every year. But it has yet to break even (132).

In 1977, a study by the Federal Trade Commission (FTC) also raised the possibility that the Blue Cross/Blue Shield had engaged in a certain amount of anticompetitive behavior with the three area HMOs. Though independent, Blue Cross originally provided financial and marketing support as well as administrative services for the HMOs. The report noted, though, that within 3 years of the startup of the Rochester HMOs, all three of them expressed dissatisfaction with the Blues marketing performance. RHN, for example, elected to develop a marketing staff of its own after only 6 months because of a "lack of coordination at the lower levels" (108).

Hawaii

Proponents of procompetitive proposals have considered the State of Hawaii as a good example of direct competition between a plan of Blue Cross/Blue Shield type and an established HMO. Hawaii is also interesting because the two competing plans cover the majority of the population in the State, and so can influence the total delivery system there. More than 80 percent of Hawaii's working population and about 72 percent of the total civilian population receive their medical care through one of the two competing plans.

One plan is the Kaiser-Permanente HMO program, which entered the State in 1958 and now enrolls about 13 percent of the State's civilian population. This program enrolls 16 percent of the population of Oahu, where Kaiser's main facilities are located (79). Kaiser has experienced a gradual enrollment growth, which has just kept pace with growth in the civilian population over the past 5 years. The enrollment of members under the Federal Employees Health Benefits Program (see app. C) provided impetus to Kaiser's growth in its early years (132).

The Hawaii Medical Service Association (HMSA)—the larger of the two plans—is a Blue Shield plan that uses the typical fee-for-service mode of payment. HMSA enrolls about 54 percent of the population. HMSA's influence is enhanced through its role as fiscal intermediary for Medicare and Civilian Health and Medical Program of the Uniformed Services (CHAMPUS) beneficiaries (163). In 1972, HMSA also began sponsoring the Community Health Program, an HMO composed of nine group practices. By 1977, this program covered about 23,000 people, or about 3 percent of the population.

Competition and Utilization Patterns

Both Kaiser and HMSA believe that the market for medical care in Hawaii is highly competitive. In a communication with FTC, Albert H. Yuen, Executive Vice President of HMSA, stated (38):

> The Kaiser Plan and HMSA maintain a posture of respectful competitors which has resulted in the growth of both programs.

Ronald Wyatt, Vice President and Regional Manager of the Hawaii Region of the Kaiser Foundation Health Plan, Inc., was more emphatic concerning this point (38):

> . . . since the late 1950's when the Kaiser-Permanente Program commenced operating here, there has been vigorous competition between Kaiser-Permanente and HMSA.

Enthoven has also argued that "there is little question but that the two plans compete vigorously," and recounts the benefits to the area brought about by market forces (79):

> Kaiser's entry into the market put pressure on HMSA to improve its benefit coverage and to strengthen its cost controls. Kaiser, in turn, found it necessary to depart from its traditional style of delivering all of its services in large medical centers and to set up five small outpatient clinics on Oahu at locations convenient to members, in order to compete effectively with HMSA's individual-practice style. Kaiser and HMSA both report hospital use for employees and their families (that is, the under-65 age group) at or below 400 days per 1,000 per year. Even after adjusting for the age of the population, Hawaii's hospital use is about 75 percent of the national average. Hawaii has about 3 short-term community hospital beds per 1,000 civilian population, compared with a national average of about 4.6. Thus the excess of hospital beds that adds so much to costs in most areas is not a problem in Hawaii. As a result, hospital cost per capita through the 1970's was about two-thirds of the national average, despite the fact that the cost of living generally was about 20 percent above the national average. HMSA and Kaiser premiums for comprehensive care are among the lowest in the Federal Employees Health Benefits Program.
>
> Various factors besides competition contribute to this desirable situation in Hawaii. The population is young. Cultural factors and healthful lifestyles play a part. But based on direct observation as well as study of the data, I believe that vigorous and effective competition between HMSA and Kaiser has been the key factor in achieving these lower costs. Both organizations make strenuous efforts to hold down costs while giving good service and comprehensive benefits to their members, in order to remain competitive with each other. And the fact that the two competitors dominate the market is important, because individual providers have a hard time escaping the cost controls of one or the other health plan.

The health insurance market in Hawaii may additionally benefit by the existence of other factors. There are more than 50,000 Federal, State, and local government employees, for example, all of whom are offered a choice of plan and a fixed or formula-based employer contribution toward the plan of their choice (79). And while HMSA is nominally a Blue Shield plan, it exercises rather stringent controls over utilization (158). Several large employers in Hawaii have been influential in promoting cost-containment activities in HMSA. The physician fees HMSA will pay are not allowed to increase faster than inflation (79). Luft (158) has observed that HMSA acts more like an IPA or an Ellwood-McClure-type health care plan (see ch. 3).

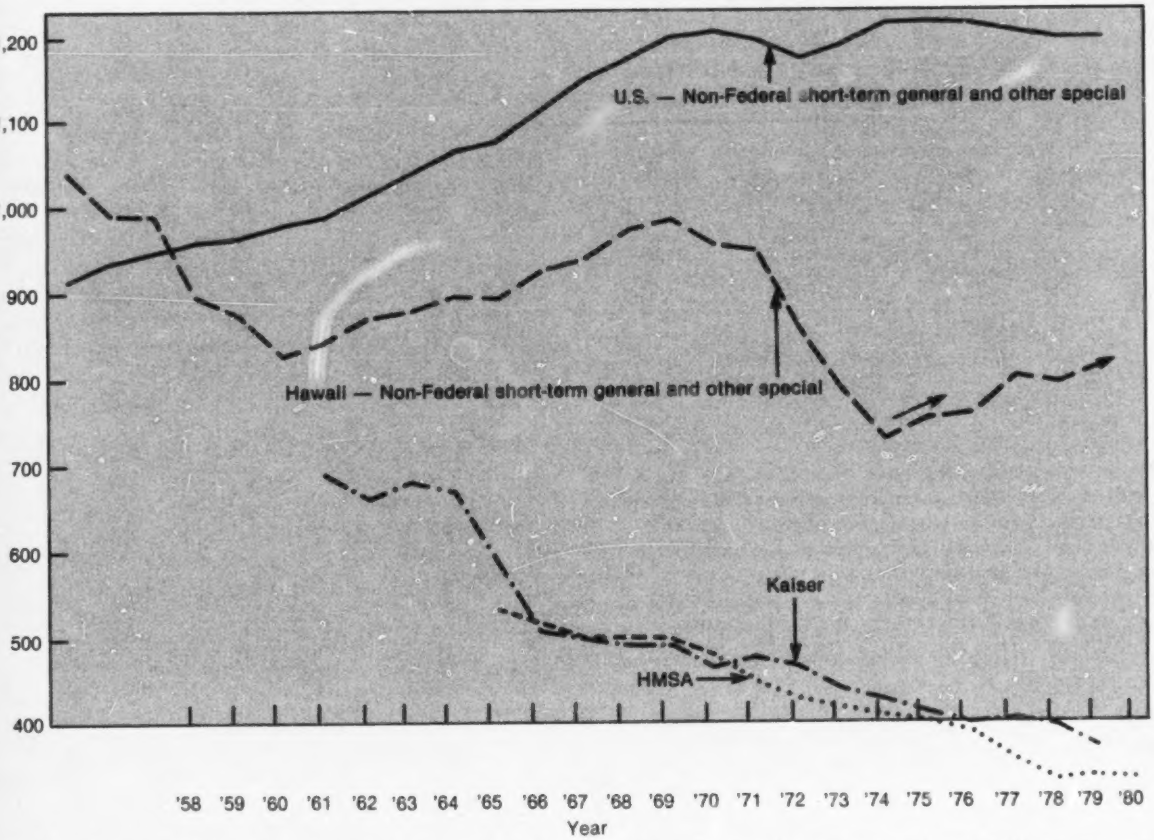
There exists, nonetheless, a certain amount of skepticism about the Hawaii experience. Enthoven (79) was quick to point out atypical demographic, cultural, and lifestyle factors. Luft (158) and Bailey (11) have observed that the history of HMSA, beginning with its founding by local social workers, the Hawaiian heritage of plantation-provided medical care, and Hawaii's unique ethnic mix, suggests that the HMSA behavior may have more to do with its special history than with competition with Kaiser.

Luft, et al. (163), also examined hospital utilization rates and patterns in Hawaii since 1955. They found that indeed HMSA and Kaiser exhibited equally low utilization rates, and, significantly, both rates had been falling throughout the 1970's. The study also identified an overall divergence, however, between this utilization pattern and hospital use by the State as a whole. As a State, Hawaii showed a precipitous decline of nearly 250 days per 1,000 population between 1969 and 1974, followed by an increase of almost 100 days per 1,000 by 1979 (see fig. D-2).

The Luft study attributes at least part of decreasing utilization rates for HMSA and Kaiser to increasing duplicate health insurance coverage with non-Kaiser and non-HMSA carriers, and so artificially deflating reported use rate (by increasing the denominator of enrollees) (163). In 1978, there were 1.23 plan enrollees per person in the State. (The Hawaii compulsory health insurance law of 1975 extended coverage to many employees not previously covered by employee-based insurance, possibly duplicating some secondary workers.) Between 1958 and 1976, too, the different age and sex composition of Hawaii implied a 12 percent lower hospitalization rate than the national average.

Still, by 1978, hospital use in Hawaii was 40 percent below the national average (163). Luft and his colleagues concede the sharp drop might be evidence of a competitive impact, and that it was around 1970 that HMSA instituted tight reimbursement policies designed to reduce hospital use. Yet their study builds a strong argument that the decline stemmed from other, extraneous factors, and not from competition with Kaiser. Declines in utilization, for one thing, were much more apparent for Medicare/Medicaid beneficiaries (hospital use for these groups fell by 23 and 37

Figure D-2.—Hawaii—Annual Hospital Days per 1,000 Persons, 1955-80



SOURCE: H. S. Luft, S. C. Maerki, and J. B. Trauner, "The Competitive Effects of Health Maintenance Organizations: Another Look at the Evidence From Hawaii, Rochester, N.Y., and Minneapolis-St. Paul," presented at the American Public Health Association Annual Meeting, Los Angeles, October 1981.

percent respectively between 1970 and 1974) than for HMSA enrollees, even when adjusted for duplicate coverage.

A substantial fraction of the decline in use also occurred on the islands of Hawaii and Kauai, where Kaiser has no facilities or enrollees. With the demise of the Viet Nam conflict, the 1969-74 period also saw a shift of CHAMPUS and Veterans Administration (VA) patients out of civilian hospitals and back to military hospitals only, reducing utilization of community hospital beds per civilian population (the ratio on which the data are based). The early 1970's were a period of further reduction of long-term beds in short-term hospitals in Hawaii.

Lastly, HMSA first began to experience rate in 1969. Kaiser, on the other hand, has always been community-rated. A possible conclusion is that the competition HMSA felt was from experience-rating commercial insurers, who had in 1970, and continue to have now, a larger share of the market than does Kaiser.

Quality Assurance

A major project conducted in Hawaii by the University of Michigan (54) has looked at the implications for quality of care in a plan setting with capitation payment, compared with other practice settings. The project consisted of four primary components: 1) an "Episode of Illness Study," 2) an "Office Care Study," 3) a "Hospital Organization Study," and 4) a "Continuing Education Project" (54). (It should be noted that there are often difficulties in undertaking and interpreting quality assessment studies. Findings can be both unstable and unreliable. See ch. 4 for a further discussion.)

The "Episode of Illness Study" (216,217), using hospital and ambulatory record data for 1968, was a study of medical care delivered by all practicing Hawaii physicians. A series of 21 diagnoses were chosen as the basis of a study of patients discharged from two general short-term hospitals in Hawaii in 1968. There was also an assessment of physician performance in the ambulatory phases (both pre- and post-hospitalization of this episode of illness) which used process and outcome measures. The results of the the "Episode of Illness Study" indicated that the prepaid multispecialty group was capable of directing its patients effectively to the appropriate specialist and maintaining a staff of specialists who were more careful in the effective use of the hospital facility (admission and length of stay) without impairing quality in the delivery of medical care.

Results of the "Office Care Study" showed that this degree of effectiveness extended to the office care setting. A further implication was that the referral or consultation pattern of patient care was more effective in the controlled prepaid group setting than in the more informal organizational pattern of other community hospitals. The important effect of the prepaid multispecialty group practice appeared to be almost totally that of assuring care in large hospitals by appropriate specialists.

As part of the "Continuing Education Project," appropriate lengths of stay were examined for selected diagnoses in six general hospitals (one, a prepaid group practice hospital) between 1968 and 1971. Although the general trend was toward a greater percentage of "appropriate length of stay," the Kaiser hospital experienced an increase in percentage of appropriate length of stay between 1968 and 1971 of 7 percent; in each of the other study hospitals there was a rise in percentage of appropriate length of stay of 16 to 25 percent between 1968 and 1971. Initially, the Kaiser hospital had a much better record of appropriate length of stay than the other hospitals. During this period control measures were introduced in the hospitalization insurance program of HMSA, and charges of the other study hospitals were covered by this program.

Rhee (225) used the University of Michigan data base to focus on determinants of the quality of physician performance. Additional data were collected on the organization of office care from the American Medical Association Group Practice Register, and data on hospital structure and activities were obtained by questionnaire. Organization of office care explained less than 1 percent of the variance in the overall performance of all physicians. The data seem to suggest that physicians in large multispecialty groups (both fee-for-service and capitation) provide the highest quality of care, while physicians in the intermediate, smaller groups provide consistently lower quality of care.

Rhee's findings on the quality of care in ambulatory settings imply that the forms and payment methods of group practice will have a noticeably positive influence on the quality of care only when the group practice setting is large enough to implement the necessary organizational controls. Overall, however, Kaiser-Permanente physicians provided better care by the study's measures than physicians in the large fee-for-service groups (54).

Multnomah County, Oreg.

Multnomah County (which includes Portland) was one of the first jurisdictions to experiment with direct financial incentives to effect choice of health care plans by the medically needy.

Until 1973, the county operated a County Hospital located on the campus of the University of Oregon Health Services Center just south of downtown Portland. While the center's teaching staff and students provided physician service, the location was very inconvenient to many potential users. In addition, the care represented a separate system—a "provider of last resort"—for the county's low-income residents.

In 1973, the Oregon legislature authorized a State takeover of the facility, freeing up $4.2 million in county funds. In turn, a new county agency, Project Health, was created to serve as a broker organization, as well as advocate and counselor for the poor, rather than as a provider of care (79,133).

Operating under waivers of several Medicaid regulations, the county offered a range of health plans with comparable benefits, comprehensive in nature, to medically needy residents. These citizens had incomes marginally above the welfare payment level, but were unable to purchase adequate medical care, and had not previously been offered publicly supported medical care outside the county-owned hospital. The county acted as a broker to negotiate health insurance packages with local health plans including HMOs (both IPA and prepaid group practices) and the Oregon Physician Services plan (Blue Shield). Each enrollee paid a monthly fee determined by the enrollee's family size and income and the total premium cost of the plan. This provided a financial incentive for the selection of lower cost plans usually lacking in Medicaid programs (8).

In 1978, an evaluation study of Project Health by A. D. Little calculated the costs per recipient, and compared these figures to costs of similar health benefits received by welfare recipients under the State's fee-for-service Medicaid plan (8). Populations enrolled in Project Health were not directly comparable to welfare enrollees (because of higher incomes), but estimates based on per capita costs suggested that Project Health benefits were 7 percent less expensive than the fee-for-service Medicaid plan applied to the same population.

One caveat, however, was that this result was heavily dependent on Project Health's ability to include the disabled with the rest of the population and enroll them in the competing health insurance plans at relatively favorable group rates covering both families and disabled adults. It should be noted that unit episodic costs were generally higher in the Project Health system, yet total per capita medical expenditures were less, reflecting lower rates negotiated with prepaid plans under community-rating structures.

There was also speculation that higher premiums charged by open-panel (IPAs) HMOs and insurance plans would result in the highest cost patients' (with greater preexisting medical needs) choosing these more expensive plans. This "adverse selection," in turn, would cause premiums to rise still further, and these plans would become even less competitive with the closed-panel (prepaid group practices) HMOs (8).

One of Project Health's objectives in seeking "mainstream care" was to avoid adverse selection, and the premiums were set with a view to distributing the clients evenly over the various health plans (79). Still, the Oregon Physician Services Plan in fact withdrew from Project Health because of rapidly rising expenditures and premiums. The effect of this withdrawal on the premiums charged by other plans is unclear. (See ch. 2 and app. C for further discussions of adverse selection.)

Other problems encountered by the project have included the turning away of applicants toward the end of each fiscal year beause of limited resources. The County General Fund has not kept up with inflation either, causing a general decrease in services (133).

Multnomah County is also a county with seven alternative delivery systems, a somewhat homogeneous population with about 7 percent of its families below the poverty level, and a minority population of approximately 5 percent, including 4 percent black. Such a demographic backdrop raises questions about how this experience would fare in cities and communities which have large minority and/or indigent populations, or do not have alternative delivery systems already in place (256).

Despite the problems and uncertainty, the strengths of the program should not be overlooked. It has provided nonstigmatized mainstream care to an income class who have traditionally had "special problems" with respect to health care (79). Consumer education and advocacy have been promoted as part of the overall program, to help clients utilize the benefits of health plans in wiser and more appropriate ways. Health care has additionally been provided in a less costly way than its Medicaid counterpart. Lastly, Project Health might partially serve as a model for implementation in other areas, and among other income groups, of a multiple-choice competitive market system.

Minneapolis-St. Paul

A highly publicized example of apparent vigorous competition and rapid HMO growth has been the Twin Cities area of Minneapolis-St. Paul, Minn. Unlike Hawaii and Rochester, the Twin Cities have multiple HMO options. The detection of any competitive effects, as a result, seems more likely. Six of the seven HMOs in Minneapolis-St. Paul have, in addition, chosen State rather than Federal qualification. Such a situation, which may approximate more closely an open competitive market, has been found deserving of further examination by several parties (163).

The Twin Cities has slightly more than 2 million people in its 10-county metropolitan area at this time. The growth rate is less than 1 percent a year. Yet HMO participation increased from a base of 1.9 percent in 1972 to 20 percent in 1982 (8,132,188). Such an increase in market share reflects an average growth rate of 28 percent per year.

The HMOs in the Twin Cities have been sponsored by a variety of organizations and feature many different financial arrangements for distributing risk. The largest and oldest HMO, Group Health Plan (121,184 members on Dec. 31, 1978), began operation in 1957 as a consumer cooperative, employs physicians on a salary basis, and purchases hospital services by contractual arrangements with community hospitals. The second largest HMO, MedCenter Health Plan (46,706 members), began in 1972 and was sponsored by the St. Louis Park Medical Center, a mainly fee-for-service multispecialty group practice. The plan has added several other physician groups and secures hospital services through negotiated contracts with a number of local hospitals.

In contrast to Group Health and MedCenter, there are three newer HMOs with somewhat closer ties to hospitals. The Ramsey Health Plan (4,025 members) contracts with St. Paul Ramsey Hospital, a public general hospital, for staff, hospital, and ancillary services and clinic space, and the hospital is partially at risk for the expense of hospitalizing plan members. SHARE Health Plan (21,862 members) is located adjacent to Samaritan Hospital, which it uses for inpatient and outpatient ancillary services and hospitalization of members. However, the hospital is not financially at risk for the expense of hospitalizing SHARE members. SHARE was sponsored initially by a mutual-benefit association for railroad employees, but it is now independent and community-based, and its physicians are salaried employees of the health plan. It is the only HMO in the area that has sought Federal qualification. The Nicollet-Eitel Health Plan (8,485 members) is a joint venture of the Nicollet Clinic (a multispecialty group practice) and Eitel Hospital. Nicollet Clinic absorbs two-thirds of any financial losses associated with the plan, and Eitel Hospital is at risk for the remaining third.

The two newest HMOs were formed partially in response to the growth of the five organizations described above. HMOMinnesota (HMOM, Twin Cities enrollment, 12,170) consists of independent physician groups that contract with Blue Cross/Blue Shield to provide medical care to an enrolled population on a prepaid, capitation basis. One of these groups is sponsored by the Ramsey County (St. Paul) Medical Society. Hospitals throughout the Twin Cities provide institutional services on a contractual basis, and Blue Cross/Blue Shield provides administrative and support services. The Physicians Health Plan (26,422 members), an IPA HMO, was sponsored by the Hennepin County Medical Society and includes over 1,200 physicians, or approximately 75 percent of those in private practice in greater Minneapolis. Participating physicians agree to absorb any losses incurred by the plan, and enrollees are hospitalized through contractual arrangements with most of the hospitals in the Twin Cities.

There is considerable variation in the premiums that the HMOs quote to different groups. In general, the quoted premiums of the HMOs vary with the benefit package offered, the expected premiums of competitors, the predicted use of services by the potential enrollee group, the ability of the HMO to assimilate additional membership, and the marketing strengths other than price of competing HMOs. Thus, Twin Cities HMOs (except SHARE because of its Federal qualification) do not construct premiums based on a community-wide rating system (39).

There are several reasons for the extensive development of HMOs in Minnesota. Minnesota has a strong liberal, reformist tradition and has been in the forefront of the cooperative movement. In the State, there are nearly 900 marketing cooperatives; 70 electric, telephone, and electric generating transmission co-ops; and 130 mutual insurance companies. This context appears to have provided an atmosphere conducive to the development of an HMO derived from the cooperative movement (Group Health Plan) and other HMOs that require the cooperation of physicians. This general attitude also appears to have stimulated the group practice of medicine in Minnesota. The availability of group practices has made it much easier for HMOs to develop, since some of the newer HMOs, such as MedCenter and HMOM, are based on the utilization of existing fee-for-service group practices.

It is instructive to note the effect of the differences in attitude towards cooperatives and group practice between Minneapolis and St. Paul. St. Paul is a more conservative city and has few group practices. Thus, the newer HMOs, which are dependent on preexisting group practices have concentrated in Minneapolis and the suburbs.

The Minnesota Health Maintenance Organization Act, passed in 1973, has established a favorable legal environment for HMO development, and has increased the willingness of physicians to accept the presence of HMOs. The act formally authorizes the establishment of HMOs and provides financial assistance to certain HMOs.

In Minneapolis, the prior existence of Group Health has also helped to make the community more receptive to new HMO development. Interstudy, a nonprofit research organization which conducted many of the early studies of HMOs and which is headed by Paul Elwood, one of the early advocates of HMOs and the originator of the term "HMO," is headquartered in suburban Minneapolis. Another key element in promoting HMO development in Minneapolis has been the National Association of Employers on Health Maintenance Organizations, a group composed of employers concerned with the rising cost of health care and interested in the development of alternative delivery systems that could restrain costs. Originally comprised only of Minnesota-based companies, this organization has been enlisting other large companies (108).

Indeed, an important characteristic of this regional experience has been its involvement with the employed, middle-income family as a result of understanding and support by a number of the area's large corporate employers. More importantly, many employers have offered multiple choice and a fixed dollar contribution to employees. Enrollments reflect such behavior: 65 percent of General Mills' employees in the Twin Cities area have enrolled in an HMO, as have 65 percent of Cargill's, 44 percent of Honeywell's, and 36 percent of Control Data's. On the other hand, only about 4 percent of 3M Co.'s employees have chosen HMOs, reflecting in part that company's lack of support for the idea (79).

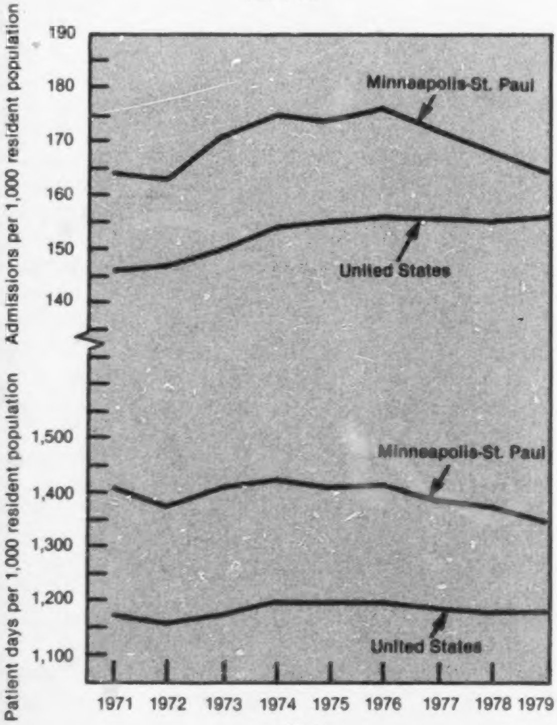
Another reason for HMO development in Minneapolis-St. Paul has been the asserted number of excess hospital beds in the area. This has prompted hospitals to encourage development of HMOs in order to secure a guaranteed population (108). HMOs have also started placing clinics in locations convenient to members and lengthening their hours of operation (79).

The longer clinic hours, the opening of outreach centers, and the increased availability and awareness of health option plans at the least substantiate the impression of a competitive process in the Twin Cities region. The evidence supporting the notion that this competition is reducing or containing costs, however, has been challenged (163).

Since 1976, admissions per 1,000 population in the Twin Cities showed a marked decline relative to national trends. When measured in terms of patient days, a relative decline is less dramatic however (see fig. D-3).

The decline in utilization has been most apparent among HMO enrollees. Nationally, people enrolled in HMOs have about 25 percent fewer hospital days per year than do similar people in conventional income plans. In the Twin Cities, HMO enrollees average about 450 days per 1,000 population, but these figures are not adjusted for differences in age, sex, and other characteristics. In fact, in studies by Blue Cross of Minnesota of employees offered a multiple-choice option, those who joined were found to have been low users of hospitals while in Blue Cross. In other words, low hospital use by HMO enrollees may partially be due in the Twin Cities to a "selection effect" by healthier groups into HMOs (163).

Figure D-3.—Minneapolis-St. Paul Metropolitan Area and United States: Use of Community Hospitals, 1971-79



SOURCE: H. S. Luft, S. C. Maerki, and J. B. Trauner, "The Competitive Effects of Health Maintenance Organizations: Another Look at the Evidence From Hawaii, Rochester, N.Y., and Minneapolis-St. Paul," presented at the American Public Health Association Annual Meeting, Los Angeles, October 1981.

Utilization declines might also be attributed to effective area PSROs. Between 1974 and 1977, the Twin Cities had the third largest decline in admission rates by Medicare beneficiaries among all PSROs in the country. There is later evidence of continued decline in hospital use by this same group through 1979 (163).

There have been other findings that make the interplay between HMO development, competitive forces in the health market, and cost containment more problematic. For one thing, downward trends in utilization are much more noticeable in St. Paul, even though most of the HMOs have been based in Minneapolis. For another, there has been long-term decline in use rates in a large number of hospitals. It suggests that the recent decline may have had its roots in planning efforts in the late 1960's to reduce capacity (as has already been mentioned, it has long been recognized that the Twin Cities is "overbedded"), and not in the recent growth by HMOs.

Thirdly, changes in coverage and reimbursement procedures for Medicaid patients, and for treatment of alcoholism and chemical dependency in the mid-1970's, created incentives to shift treatment out of the hospital and to use outpatient facilities. The importance of such incentives, however, is unknown. Lastly, some firms have found that after 3 or 4 years of multiple choice, the conventional insurance option is left with a high-cost uninsurable pool and that this has increased, rather than decreased, total premium costs. Honeywell, one of the major initial backers of HMOs, seems to have experienced the major savings in spite of large-scale HMO enrollment (163).

A 1977 staff report of FTC did conclude that, despite their very small market share, HMOs have had a competitive effect in the Twin Cities (108). The report also cautioned, though, that while HMOs appeared to have a bright future in the region, the number of HMOs may have been too large for all to remain viable, and that some mergers and/or failures would not be surprising (108).

California

California is an oft-cited area where the introduction of alternative delivery systems such as the HMO has been proclaimed to have had a significant impact on competition among health insurers. Approximately

20 percent of California's population (about 4 million people) is currently enrolled in a prepaid plan of an HMO or other alternative delivery system type. (Given the number of people in the State on Medicare (15 percent) and Medicaid (14 percent), only about 50 percent of other Californians have chosen not to enroll in an alternative delivery program.)

The Ross-Loos Medical Group, established in California in 1929, is the oldest and largest physician-owned prepaid health plan in the Nation. It was followed by the Kaiser-Permanente Plan, which had its origins in the State of Washington in 1933, and was first offered in California in 1942. Both Kaiser and Ross-Loos, particularly in their early years, relied heavily on organized labor for their growth. Kaiser's growth has been particularly remarkable and has become the largest group practice prepaid plan and the largest nongovernmental health care delivery system in the United States. Kaiser has a current enrollment of about 3.2 million people, equally split between plans in northern and southern California. Even more significant, perhaps, is the fact that in northern California about one out of every two employees offered the option of joining the Kaiser plan does so (31).

One competitive response to Kaiser's growth over the last two decades has been the development of foundations for medical care by about half of the nonrural county medical associations in California (31). Foundations preserve the fee-for-service approach, and have typically offered the indemnity insurance companies a mechanism which would conduct peer review, process both inpatient and outpatient claims, and guarantee that participating physicians would not charge over the maximum fee schedule. In return, the medical foundations require the insurance companies to meet certain specifications of coverage. Physicians in these foundations are not at risk.

The foundations have attracted significant portions of the market, between 10 and 20 percent of the total population in the Sacramento, San Jose, and San Diego areas, and have attempted to create a climate of restraint on length of stay and physician overutilization. Still, the foundations have never offered the comprehensive benefits or integrated system approach found in the Kaiser prepaid group practice (31).

From these foundations have recently evolved a series of broad-based IPAs which utilize the foundation expertise in peer review and claims processing. Presently, six of these organizations are federally qualified HMOs, and two more broad-based IPAs are in the process of qualifying. Interestingly, all HMO plans that are expanding to any degree are federally qualified because: 1) most major employers are requiring Federal certification before it is offered to its employees; and 2) the deficiencies of the California prepaid health care plans for Medicaid recipients in the early 1970's (see app. E) stimulated the growth of extremely restrictive State regulations for prepaid plans, regulations far stricter and more difficult to qualify under than the Federal HMO laws (31).

A second major competitive mechanism in the State has been the reaction by Blue Cross and Blue Shield. Blue Cross of Northern California began to respond to the presence of Kaiser in the mid-1960's by broadening its benefits packages, introducing a hospitalization peer review program, and creating a network-based HMO and network-based clinics. Blue Cross of Southern California (an organizational entity separate from its counterpart in northern California) began a network-based HMO, CommuniCare, in 1973. Importantly, Blue Cross does not receive a discount on charges from hospitals as it does in many other areas of the country, and so has no competitive advantage over private insurers, nor is Blue Cross more attractive to HMOs seeking hospitalization agreements (108).

Other competitive mechanisms have been the creation of four originally hospital-inspired or hospital-based HMOs, an HMO developed by a county government, an HMO developed by the Safeco Insurance Co., and 12 surviving HMOs from the prepaid health care plan concept. There is also the recent development in the HMO field in California of the purchase of established HMOs by large corporations. Currently, there are 32 HMOs functioning in California, of which 21 are federally qualified (31).

Lower hospital utilization rates by selected California HMOs are seen in table D-1. A 1977 FTC study also argued that the entry of HMOs was responsible for lowering the hospital utilization of people in conventional plans (108).

Yet, a contrasting approach (158) examined total expenditures on health care in California, because even

Table D-1.—Selected Data, California Health Maintenance Organizations

HMO	Operational year	Hospital days/ 1,000 members, 1980
Kaiser Foundation Health Plan, Inc. (Northern California)	1945	356
Foundation Health Plan	1972	351
Maxi-Care	1973	330
Ross-Loos Health Maintenance Organization	1929	474[a]
Family Health Plan	1965	398
Health Net	1979	316
Kaiser Foundation Health Plan, Inc. (Southern California)	1950	401

[a] Data are for the year ending 1979.

SOURCE: Department of Health and Human Services, Office of Health Maintenance Organizations, *National HMO Census*, DHHS publication No. 82-50177 (Rockville, Md.: Public Health Service, June 30, 1981).

if conventional providers constrained hospitalization in the face of HMO competition, they might maintain their incomes by increasing charges and by providing more physician services. In fact, one of the responses by Blue Cross of Northern California to Kaiser competition was to increase its coverage of ambulatory services and encourage efforts to reduce hospitalization. The most recent figures on State per-capita health expenditures do not, moreover, provide evidence that extensive HMO enrollment has resulted in overall cost containment. California ranked third highest among the 50 States.

Despite low hospitalization rates, California ranked second highest in the share of per-capita expenditures for physician services, meaning that the physician share of the medical care pie is much larger in this State. California ranked 46th in the share of the expenditures for hospital care. By some standards, then, the mix of medical services bought by Californians may be different, but there is no evidence that even massive HMO enrollment has resulted in overall cost containment. This example suggests, too, that the competitive effect of HMOs may not be easily discerned (158).

Denver, Colo.

Alternative delivery systems have captured almost 20 percent of the market in the metropolitan Denver, Colo., area.* Of that 20 percent penetration, though, less than half is due to enrollment in prepaid group plans. Instead, preferred provider organizations (PPOs) have attracted the greater number of individuals opting out of more traditional fee-for-service practice in recent years. According to 1980 Denver Standard Metropolitan Statistical Area population figures, PPOs hold almost a 15 percent penetration into the Denver market. More interestingly, of the estimated 400,000 people in the area who have access to PPOs, approximately 250,000 are actually using them.

PPOs are generally organizations alined with self-funded employers who assume all of the risk of health care costs. Labor-management trust funds or the Taft-Hartley trust funds are the most common participant in PPOs. What PPOs do is allow management to preserve its commitment of freedom of choice of provider to employees, while attempting to hold down costs and utilization through peer review and the promotion of cost-effective health care. In turn, any savings accrued by the PPOs return directly to the trust fund, and so to the employer.

Employers often favor PPOs exactly because of the possible savings, and because HMOs have been traditionally stingy in sharing utilization data of a particular group with its employer. (The HMOs claim that since they must community rate, this information is not relevant.) Hospitals and physician providers are willing to join PPOs in order to secure a patient base. Hospitals and physicians also agree to negotiated rates and fee schedules in return for guaranteed prompt payment and no uncollectables. PPO benefits are also structured so that the physician has an incentive to provide services on an out-patient or office basis. Providers continue to be paid, however, on a fee-for-service basis.

Each employee, on the other hand, has a choice at the time of decision to seek medical care. One option is a regular indemnity plan with deductibles and coinsurance. The other choice is to use a PPO, which has no deductibles and coinsurance, but does include a copayment per office visit. If employees choose a PPO, they are restricted to using certain physicians and hospitals that are members of that PPO.

In Denver, about 40 percent of all employers are self-funded. At present, one private firm acts as the intermediary for all area PPOs, handling both indemnity and PPO claims. Additionally, the firm is tracking utilization, lengths-of-stay statistics, and other data that could be used to eliminate PPO providers who overutilize. There are currently four PPOs in Denver, each affiliated with a separate hospital.

PPOs have largely been a response to the growth and development of HMOs in the area, particularly the Kaiser Health Plan of Colorado. The federally qualified Kaiser group, with an enrollment of over 120,000 members, has four clinics spread out in the Denver suburbs. Kaiser utilizes one central hospital, St. Joseph's, for 85 percent of their hospitalization. Within the last 2 years, Kaiser has also started a per diem arrangement with St. Joseph's with some utilization guarantee in return. Adjustments are made if Kaiser's actual utilization is more or less than the guaranteed amount; the fixed costs v. variable costs of St. Joseph's are also evaluated.

The success of the Kaiser Plan has additionally prompted the recent establishment of HMO Colorado (3,657 members), a Blue Cross/Blue Shield network-sponsored HMO. This HMO, operational only in the last 2 years, received a line of credit from Blue Cross/Blue Shield for initial funding but was developed as a separate entity.

HMO Colorado has been organized around four multispecialty group practices, each separate in terms of recordkeeping and funding. Each clinic is paid a per member, per month fee by every member associated with that clinic. In turn, each clinic has responsibility for its own financial stability while using the other three clinics in the program as a basis for comparison. HMO of Colorado currently uses several Denver hospitals with some discount agreements, and has also expressed interest in setting up a per diem with St. Joseph's.

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*This section condensed from JoElyn McDonald, U.S. Congress, Washington, D.C., personal communication, March 1982 (171).

There are two other HMOs in the Denver area: the Arapahoe Health Plan, a federally qualified IPA with about 700 members; and Comprecare, another federally qualified IPA with over 50,000 members. The fate of Comprecare, however, is somewhat uncertain, because its growth has outpaced its ability to control costs and utilization in the last 4 years.

The overall effects on utilization and costs in the Denver area, with the successes of HMO and PPO market shares, are still unknown. HMO Colorado claims, for example, to have the lowest utilization rates in the Denver area. How comparable the membership population is to other plans and groups is, however, at least questionable.

There is also the question of how effective PPOs can and will be in containing costs or changing provider behavior, since it is the trust funds in the case of PPOs that assume the risk. Whether fear of Kaiser and other HMOs, as well as the concern about a shrinking patient base, will provide enough incentive for PPO physicians and hospitals to hold down costs is still far from clear.

Appendix E.—California Prepaid Medi-Cal Health Plans*

The State of California, through the Waxman-Duffy Prepaid Health Plan Act, enacted in 1971 an alternative form of delivering, organizing, and financing health care services to beneficiaries of Medi-Cal, the State's Medicaid program. Program costs in California had risen rapidly and continuously under an existing fee-for-service system. In March 1966, Medi-Cal program operations began spending at the rate of $600 million per year. By 1970, program costs had doubled. Spiraling costs and a suspicion that at least some of the inflation was caused by unnecessary provision of health care services led the California legislature to enable the State Health Department to contract with prepaid health plans (PHPs) for the delivery of health care to Medicaid beneficiaries.

PHPs were comparable to health maintenance organizations (HMOs). Both were private entities—primarily corporations—which agreed to provide a broad range of health care services to groups of individuals for a fixed monthly rate per individual or family.

PHPs were designed to provide comprehensive health services to enrolled Medi-Cal beneficiaries in a specified service area. PHPs were reimbursed on a prepaid capitation basis dependent on the number of enrollees in the aid categories: Aid to the Blind (AB), Aid to Old Age Survivors (AOAS), Aid to the Totally Disabled (ATD), and Aid to Families With Dependent Children (AFDC). The vast majority (from 75 percent to over 90 percent depending on the PHP) of PHP enrollees were AFDC beneficiaries.

The first contract for a PHP that was not a pilot project took effect in May 1972. By July of 1973, there were 47 operational projects with a total enrollment of over 178,000 Medi-Cal beneficiaries. The PHP program had resulted in the development of more health systems with capitation payment in California than in any other State.

From its inception, the PHP program aroused great controversy throughout the State. Charges were made ranging from financial manipulation and fraudulent marketing practices to the delivery of inadequate medical care.

In 1973, the Federal Government enacted the Health Maintenance Organization Act to provide funds for the development of HMOs across the Nation. Senate hearings were held in 1975-76 not only to investigate allegations of fraud and abuse by PHPs, but also to prevent the occurrence of similar errors in other States with the new Federal HMO development program.

The Senate hearings found that almost all of 54 California PHPs were nonprofit, tax-exempt organizations that subcontracted with for-profit corporations and partnerships owned or controlled by officers or directors of the nonprofit organizations. The hearings revealed that this type of corporate structure and contracting practice opened the way for the diversion of Medicaid funds away from the program's purposes.

Independent individuals and groups served as brokers, promoting State contracts for interested entrepreneurs in return for a percentage of Medicaid program payments made under State contracts. No funds were available for startup or fixed costs, so it was imperative that the PHP enroll members as quickly as possible. The money to finance the contracts subsequently came from the poor who were enrolled in PHPs by door-to-door salesmen employed by the plans, some of whom threatened, coerced, and forced the signatures of Medicaid beneficiaries on their plan enrollment forms. Other enrollees, who needed treatment, were involuntarily disenrolled from the plans by the operators when the cost of their care became expensive.

The quality of care provided in some PHPs was below reasonable standards, as judged by the State's own medical auditors. Some of the plans contracted with substandard and nonaccredited hospitals. Nonlicensed physicians were often recruited. Selective enrollment practices were common. Thousands of promised childhood immunization programs were never provided. Other types of care were often "skimped" on. Consulting firms exacted exorbitant fees for providing management and computer services.

Despite awareness of these problems, the State did little from the PHP program's inception in 1972 to 1975 to reform the program. Investigative reports on abuses and fraud were ignored, as were medical quality audit findings. The State failed to scrutinize the role of consultants. Program contract managers were rotated so frequently that none spent enough time working with specific plans to learn enough about each to manage them properly. The State had no method to objectively monitor quality of patient care, nor did it develop, in violation of its own regulations, an actuarially based reimbursement rate.

Federal response to this situation came late in 1976 through the Health Maintenance Organization Act amendments, which required that all PHPs receiving Medicaid funds be federally qualified HMOs. This forced the California PHPs to include the scope of

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*This appendix is condensed from *Prepaid Health Plans and Health Maintenance Organizations*, report of the Committee on Governmental Affairs, United States Senate, Report 95-749, Apr. 20, 1978; and from General Research Corp., *Evaluation of California's Prepaid Health Plans*, submitted to the Department of Health, Education, and Welfare, contract No. HEW-05-73-194, September 1974 (264).

federally mandated plan benefits and to be approved by the Department of Health, Education, and Welfare (now the Department of Health and Human Services) as a condition for continuing in the California Medicaid program.

Some PHPs did not seek Federal qualification and dropped out of the program. Other plans qualified, or sought qualification. The State concurrently implemented tougher regulations for certification, imposing standards in some areas that were even more stringent than Federal guidelines:

- new regulations, paralleling the Federal HMO legislation and strengthening the State's existing regulations, were promulgated;
- a new standard contract between the State and individual plans was developed, better improved performance standards were adopted, and a State staff team approach to contract management was instituted;
- standards for the evaluation of quality of care were established; and
- the process by which contracts were renewed was totally revamped.

These efforts and the 1976 Health Maintenance Organization Act amendments had the effect of reducing the number of PHPs with State Medicaid contracts from 26 to 12.

In addition, the California legislature passed and the Governor signed in 1977 a new law aimed at responding to problems identified by congressional investigators and others. For example, the new law prohibited certain types of marketing practices. Responding to the problem of complicated corporate structures, the law required the prime PHP contractors to manage themselves and prohibited subcontracting for management. The statute prohibited interentity conflicts of interest on the part of plan officials. In addition, broad requirements were established for disclosure by plan officials of ownerships' interest and reimbursement.

Appendix F.—Supplementary Medical Insurance for Medicare Beneficiaries

Background

Elderly people have a disproportionate share of all personal health expenditures. Persons aged 65 and over are only about one-fifth as numerous as those aged 19 to 64, but their total personal health care expenditures are more than half as large as the total for the population aged 19 to 64. Although the aged represent only about 11 percent of the population, they account for over 29 percent of all personal health expenditures (131).

These figures reflect the more frequent illnesses of the aged and the greater expenses involved in their care, which occurs primarily in a hospital setting. Aged persons are more than four times as likely to have their activity limited by chronic health conditions than are those under 65. The aged are hospitalized at 2½ times the rate for persons under age 65, and their average length of stay is almost twice that of other persons (261).

The response of Congress to these needs was the enactment of the Social Security Amendments of 1965, establishing the Medicare program and Medicaid program. As enacted, the Medicare program contained two parts: a hospital insurance program (Part A) and a supplementary medical insurance plan (Part B).

The hospital insurance program provided protection against the costs of inpatient hospital services, post-hospital extended care, post-hospital home health services, and outpatient hospital diagnostic services for beneficiaries under the Social Security and Railroad Retirement systems when they reach age 65. Each of these benefits was accompanied by deductibles and/or coinsurance payments by which the beneficiary shared in the costs of health services provided. Limitations on covered services were specified. In addition, Congress included provision for increases in deductible amounts for inpatient hospital and outpatient hospital diagnostic services to keep pace with increases in hospital costs.

Medicare and "Gaps" in Coverage

By design then, Medicare does not cover all health care expenses incurred by the elderly. As it evolved through the legislative and policymaking process in the 1960's, Medicare assumed many of the characteristics of private health insurance at that time, focusing on the payment of medical bills during periods of acute illness. Medicare, however, was intended to serve as a core health insurance program which the elderly poor could augment with Medicaid; other senior citizens, depending on their individual needs and resources, could augment Medicare through private health insurance.

Despite increased Federal spending over the years for both Medicare and Medicaid, for several reasons a growing number of senior citizens have turned to private health insurance for protection. For example, the Medicare cost-sharing requirements have risen at a much faster pace than cost-of-living increases provided to the elderly by Social Security. In addition, medical services reimbursed by Medicare are geared more toward episodic, short-term, acute illness than toward chronic, long-term disorders prevalent in the elderly population. Besides deductibles and coinsurance provisions, Medicare also does not pay for catastrophic, custodial, dental, or eye care. Therefore, there are important "gaps" in Medicare's coverage for the elderly.

These problems were further compounded by health care costs that generally outpaced inflation in other sectors of the economy, and a 15-percent decrease in this time period in the number of physicians who accepted Medicare patients on "assignment" (i.e., the physician agrees to accept full payment from Medicare for their services. When the physician does not accept assignment, the elderly patient is responsible for the difference between what Medicare will pay and what the doctor charges for a particular service).

By the mid-1970's, Medicare coverage had eroded to only 38 percent (compared with 50 percent in 1969) of the health care costs of the elderly. Fearful of the financial hardships of poor health, and confused by a complex benefit structure (see table F-1) that left "gaps" in their coverage, the elderly increasingly purchased supplemental, or "Medigap," insurance policies. By 1977, approximately 66 percent of the elderly population—15 million of the Nation's 23 million senior citizens—had at least one health insurance policy to supplement their Medicare benefits (267).

Private Health Insurance and Its Problems

As evidenced by the discussion in the preceding section, the elderly had a legitimate concern regarding Medicare and its ability to adequately address their financial needs during times of illness. The result was a profusion of Medicare supplemental or Medigap policies that, because of the complexity of Medicare ben-

Table F-1.—Medicare Benefits and Limitations, 1981

Kind of care	Medicare pays	Patient must pay	Comment
Part A—hospitalization	Days 1-60	Initial deductible ($204)	Adjusted annually
	Days 60-90	Daily deductible ($51)	Adjusted annually
	Days 90-150	Daily deductible ($102)	Adjusted annually
	After 150 days-no coverage	For *all* care	Reserve days (60) usable only once
			Care must be under doctor's orders and only be available in hospital
Part A—psychiatric hospitalization	Days 1-90	Initial and daily deductible	Only 190 days of care available in lifetime
	After 190 days-no coverage	For all care	
Part A—nursing homes skilled nursing care	Days 1-20 total	Nothing	Must be in Medicare certified skilled nursing facility (SNF)
	Days 20-100	Daily deductible ($25.50)	All five provisions must be met for reimbursement (including prior hospitalization)
	After 100 days-no coverage	For all care	No coverage for custodial care
			No coverage for private duty nursing or first 3 pints of blood
Part A—home health care	100 visits in 12-month period	For most other home health care	Patient must meet six conditions (including prior hospitalization or SNF care)
	Total cost of care for part-time skilled nursing, physical therapy and several other services		Does not cover full-time nursing care at home, drugs, meals and homemaker services
			Must be confined to home and be under doctor's orders
Part B—home health care	100 visits in a calendar year	$60 (Part B yearly deductible) and all noncovered services provided	Patient must meet four conditions to obtain reimbursement (including must be confined to home and be under doctor's orders)
			Does not require prior hospitalization
			Can provide coverage *after* 100 visits under Part A
Part B—physician and other medical services	Cost of care: except	Initial deductible ($60/yr) and 20% of all charges above $60 (determined to be reasonable and covered by Medicare in a calendar year)	Pays for doctors services, outpatient hospital care, outpatient physical therapy and speech pathology services, and other services
			Reasonable charge is *lowest* of customary, prevailing, or actual charge
Outpatient mental illness	$250/yr	All cost above $250	
Ambulance transportation	Most	All other costs	Available only when other forms of transport would endanger patient's health
Drugs	If drugs must be administered	All other drugs	
Immunizations	If required for treatment and ordered by physician	All other times	
Dental care	Jaw surgery and setting fractures only	All other costs	
Dentures	Nothing	Total cost	
Hearing and eye exams	Nothing	Total cost	
Eyeglasses and hearing aids	Nothing	Total cost	
Routine physical exams	Nothing	Total cost	
Most routine foot care	Nothing	Total cost	
Chiropractor's services	Manual manipulation of spine	All other costs	
Prosthetic devices	Most	All other costs	
Blood	Most	For first 3 pints	Some coverage under both Part A and Part B
Medical supplies	Dressings, splints, and casts	All other costs	

SOURCE: T. Van Ellet, *Medigap: State Responses to Problems With Health Insurance for the Elderly* (Washington, D.C.: Intergovernmental Health Policy Project, George Washington University, Oct. 30, 1979).

efits, were infinitely varied, with many options regarding policy benefits and price. Comparison shopping among the options, however, was confusing to many senior citizens, with premium rate structures sometimes "unfathomable" (140).

Private health insurance policies marketed to the elderly have concentrated on the cost sharing for covered services, often not including open-ended or catastrophic expenses, and have generally fallen into three categories:

- Medicare supplemental policies, generally referred to as "wraparound" coverage, usually pay some or all of Medicare's deductibles and copayments. Some policies may also pay for some services not covered by Medicare.
- Indemnity policies usually pay a fixed amount of money for each day of hospitalization. Some indemnity policies are attractive to the elderly because they pay in addition to other insurance held by the policyholder, providing extra income in times of illness. However, benefits are not structured to reflect the actual charges for an inpatient stay in a hospital.
- Limited policies or "dread disease" policies are another form of indemnity insurance. These policies provide benefits for only a single disease, such as cancer, or a group of specified diseases, and most benefits are keyed to hospitalization. Many States have banned limited or dread disease policies, which generally have a low rate of return to elderly policyholders.

Serious problems in the private insurance marketplace surfaced in a series of congressional hearings in 1978 on Medigap issues, and also in a report by the Federal Trade Commission (FTC) in July of that same year. Widespread company and individual agent abuses and problems in the sale of health insurance to the elderly population were noted by investigators. The following were identified (267):

- lack of policy standardization (complicating comparison shopping);
- the purchase of duplicate/excessive coverage (in most cases, worthless to the holder);
- lack of policy clarity (small print, numerous exclusions, policy riders, and a plethora of medical and legal terminology);
- low loss ratios (i.e., the percentage of premiums returned to the policyholders in the form of benefits), documented in table F-2, for preexisting conditions;
- clauses for preexisting conditions;
- claims-handling disputes;
- mail order insurance fraud; and
- deception, fraud, and high-pressure sales techniques by insurance agents on a widespread and nationwide basis.

At least 23 percent of those who purchase Medicare supplements were thought to have some duplicative insurance coverage.

It was further revealed that States had done little or nothing about these problems. Inadequate laws, regulations, and resources (i.e., money and personnel) kept many States from aggressively disciplining companies and agents engaged in fraudulent practices (267). In testimony before the House Select Committee on Aging (262), only 11 States reported having fined or disciplined companies for health insurance abuses. In cases when fines were issued, they tended to be minimal.

Table F-2.—Returns on All Insurance as Compared With Medicare Supplementary Policies, Selected Companies, 1977

Company	Percent return on all insurance[a]	Percent return on Medicare supplements
Mutual Protective Insurance	35	22
Medico Life	28	25
Mony	66	28
New York Life	75	28.7
American United Life	83	28.9
National Casualty Co.	59	30
American Progressive	47	33
National Security Insurance	21	35
Reliable	37	36
Constitution Life	78	37
Old American	45	38
Pioneer Life of Illinois	40	39
Liberty National Life	46	40
Pacific Mutual	85	40
Businessmen's Insurance	99	43
American Exchange Life	43	44
Commercial State Life	51	17
Union Bankers	53	48
Country Life	71	49
Aid to Lutherans	44	50
All American Casualty	87	52
Continental National America	82	55.4
Bankers Life & Casualty	67	57
Guarantee Reserve Life	62	57
American National	81	57.5
American Variable Annuity	85	63
Chesapeake Life	90	65
Guardian Life Insurance	82	66
Mutual Benefit Life	72	70
Banker's (Iowa)	82	75
Home Life	76	77
Nationwide	79	78
Durham Life	67	79
Life of Virginia	78	82
Metropolitan	75	83
National Life and Accident	59	85
Provident Mutual	79	86
Blue Cross/Blue Shield	—	91

[a] Figures in this column estimated.

SOURCE: T. Van Eliet, *Medigap: State Responses to Problems With Health Insurance for the Elderly* (Washington, D.C.: Intergovernmental Health Policy Project, George Washington University, Oct. 30, 1979).

Interim State and Federal Responses

Every State had in place in 1978 an unfair trade practices act applicable to the business of insurance. Regulation of the industry has been, in fact, almost exclusively the responsibility of the States by virtue of the McCarran-Ferguson Act of 1945 (ch. 20, 59 Stat.). The act excluded the "business of insurance" from the Sherman, Clayton and the FTC acts, and left regulation of the industry to State law. In place, then, were laws and regulations to prohibit fraud, abuse, or misrepresentations in the marketing of Medicare supplementary insurance.

As previously discussed, though, congressional hearings revealed the shortfall of many State laws, regulations, and their attendant enforcement. The hearings heightened Federal interest, and further Federal involvement was advocated on several points. First, the Federal Medicare program created the Medicare supplementary insurance business. Secondly, the area merited consideration in terms of whether there was a special need for consistency in regulatory approaches such as disclosure, standardization, and labeling. Different systems in every State would impose added costs of compliance on insurers and might confuse consumers, many of whom move at or after retirement. Lastly, many plans were sold by mail, and some States could not enforce Medicare supplementary regulations against mail order insurers not licensed in their States (64,262).

Several bills were introduced in the 96th session of Congress addressing some of the problems surrounding the marketing of Medicare supplements. Generally, the legislation proposed to increase the Federal Government's role in monitoring and controlling the private health insurance marketplace (267).

The States collectively took initiative in this area as well. The National Association of Insurance Commissioners (NAIC), a voluntary association of the chief insurance regulatory officials of the States, has traditionally played an important role in developing and revising State insurance statutes and regulations. In 1978, NAIC established a task force to study the marketing of health insurance to the elderly (236). As a result of the study, NAIC promulgated standards in June 1979 as safeguards for insurance purchasers in the "Model Regulation To Implement the Individual Accident and Sickness Insurance Minimum Standards Act" (236). The model covered standards for policy provisions, minimum standards for benefits, loss ratio standards, disclosure standards, and administrative procedure standards.

Primarily on the basis of two provisions contained in the NAIC model law, Congress added section 1882 to title XVIII of the Social Security Act. Enacted on June 9, 1980, the statute (the Social Security Disability Amendments of 1980, Public Law 96-265) was an effort to create an incentive for States to upgrade their regulation of Medicare supplement health insurance policies. Basically, the law is fourfold. It provides for: 1) the creation of the Supplementary Health Insurance Panel, 2) the establishment of a Voluntary Certification Program, 3) creation of criminal penalty provisions, and 4) a study of the Medigap regulations (248).

The New Federal "Medigap Law"

As originally proposed, under section 1882, the Secretary of the Department of Health and Human Services (DHHS) would have determined whether individual State programs met or exceeded the standards contained in NAIC's June 1979 Model Regulation. However, recognizing the traditional role of the States in regulating the business of insurance, Congress amended its original proposal to give recognition to the expertise in insurance existing at the State level. In its final form, section 1882 established the Supplementary Health Insurance Panel, composed of four State Insurance Commissioners appointed by the President and chaired by the Secretary of DHHS, as the body responsible for determining whether State Medicare supplemental insurance regulatory programs meet or exceed the minimum standards set forth by the act. A provision was also added requiring the panel to report to Congress by January 1, 1982, those States unlikely to have in place by July 1, 1982, a program that meets or exceeds the minimum standards.

On November 6, 1980, Commissioners William H. L. Woodyard III of Arkansas, Joseph C. Mike of Connecticut, Roger C. Day of Utah, and Susan M. Mitchell of Wisconsin were appointed to serve on the Supplementary Health Insurance Panel. Tera S. Younger, Director of the Bureau of Program Operations in the Health Care Financing Administration (HCFA), is the designated representative of the Secretary and serves as the panel's chairperson.

The panel has reviewed the laws and regulations governing Medicare supplemental insurance in each State and the District of Columbia. These reviews were conducted in open meetings, and each State was invited to speak on behalf of its own program. During the review, a vote was taken to render an advisory opinion on the program, approve the program, or approve the program subject to certain conditions. Table F-3 summarizes the minimum Federal standards used by the panel in making its determinations of individual State compliance.

Advisory opinions were rendered at the request of a State so that it could determine where its program stood in comparison to the minimum standards, without having the panel formally act on the regulatory program. Advisory opinions were also issued in instances where a State's regulatory program required an extensive overhaul to bring it into compliance and the State wished the panel's guidance.

Programs approved by the panel meet or exceed the Federal minimum standards. A program approved conditionally by the panel was one in which there was general compliance with the Federal minimum standards, but some deficiencies existed, or complying

Table F-3.—Federal Standards for State Regulation of Medicare Supplementary Insurance

Minimum Federal standards

- 6 months or less limitation of preexisting condition
- Applies to group and individual policies
- Loss-ratio requirements:
  - 75 percent group
  - 60 percent individual
- Equivalent definitions as contained in NAIC model of:
  - Hospital
  - Medicare
  - Benefit period
  - Accident
  - Physician
  - Nurse
  - Skilled nursing facility
  - Sickness
  - Medicare eligible expenses
- Automatically changes Medicare cost-sharing amounts
- Limitations of benefits do not extend beyond June 1979 NAIC model
- Requires policy or combination of policies to cover both Part A and Part B minimums
- Requires coverage of Part A hospital coinsurance from 61 to 90 days
- Requires coverage of Part A hospital coinsurance during lifetime reserve days
- Requires coverage of 90 percent of Part A expenses after exhaustion of lifetime reserve to a lifetime minimum of 365 additional days
- Requires coverage of 20 percent of eligible expenses under Part B regardless of hospitalization subject to $200 deductible and maximum of $5,000 per calendar year
- Free-look provision—refund available within 10 days of policy delivery and 30 days for direct response
- Delivery of buyer's guide and written receipt at time of application. Direct response by the time policy is delivered
- Outline of coverage requirements
- Replacement requirements
- Prohibits use of terms "Medicare Supplement," "Medigap" and words of similar import unless the policy meets these minimum standards

SOURCE: Department of Health and Human Services, Health Care Financing Administration, "The Supplemental Health Insurance Panel's Report to the Committee on Finance of the Senate and the Committees on Energy and Commerce and Ways and Means of the U.S. House of Representatives," unpublished, Baltimore, Md., Feb. 2, 1982.

legislation or regulations were prepared but were not yet in effect. States with conditionally approved programs were asked to modify them in a manner specified by the panel to achieve compliance. Once the modification was accomplished, the condition was removed and full approval was granted.

A State program was judged not expected to be in compliance with the standards only after the panel had issued an advisory opinion or a conditional approval and the State had declined to make the changes necessary to achieve compliance.

On the basis of the results of these reviews, the panel determined that the programs of 45 States and jurisdictions were expected to meet the Federal minimum standards by July 1, 1982. Ten were not expected to comply by that date. A listing of the status of each State program is found in table F-4.

Of the 45 States that the panel expected to be in compliance by July 1, 1982, 22 require modifications to, or finalization of, their Medigap regulatory programs

Table F-4.—State Compliance With Federal Minimum Standards for Supplementary Health Insurance

States expected to meet the Federal minimum standards by July 1, 1982:

A. States approved:
1. Alabama
2. Alaska
3. Arizona
4. Arkansas
5. Colorado
6. Florida
7. Georgia
8. Indiana
9. Iowa
10. Kansas
11. Mississippi
12. Montana
13. Nebraska
14. New Hampshire
15. North Carolina
16. North Dakota
17. Oregon
18. Tennessee
19. Texas
20. Utah
21. Vermont
22. Virginia
23. West Virginia

B. States conditionally approved or given advisory opinions which are expected to be in compliance by July 1, 1982. The panel will continue to review the progress of these States to assure they finalize their programs or make the required modifications:
1. Connecticut
2. District of Columbia
3. Hawaii
4. Idaho
5. Illinois
6. Kentucky
7. Louisiana
8. Maine
9. Maryland
10. Michigan
11. Minnesota
12. Missouri
13. New Mexico
14. Nevada
15. Ohio
16. Oklahoma
17. South Carolina
18. South Dakota
19. Washington
20. Wisconsin

C. States from which the panel has not received a formal submittal but which are expected to be in compliance by July 1, 1982. The panel will continue to review the progress of these States to assure they finalize their programs:
1. Delaware
2. Puerto Rico

States not expected to meet the Federal minimum standards by July 1, 1982:

A. States conditionally approved or given advisory opinions which are *not* expected to be in compliance by July 1, 1982:
1. California
2. Massachusetts
3. New Jersey
4. Pennsylvania[a]
5. Rhode Island
6. Wyoming

B. States from which the panel has not received a submittal but which are *not* expected to be in compliance by July 1, 1982:
1. New York
2. Guam
3. Virgin Islands
4. American Samoa

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[a] Pennsylvania's regulation is effective Sept. 20, 1982. The panel recommends that the Federal Voluntary Certification Program not be implemented in Pennsylvania.

SOURCE: Supplemental Health Insurance Panel, "Report to the Committee on Finance of the Senate and to the Committees on Energy and Commerce and Ways and Means of the House of Representatives," Department of Health and Human Services, Washington, D.C., Feb. 2, 1982.

before they will fully comply. The panel intends to conduct a continuing review of these States to monitor their progress and confirm their ultimate compliance. A continuing review of those States which are not now expected to have a program which meets the Federal minimum requirements will also be conducted. This will enable the panel to provide timely consideration to any State which may decide to adopt the minimum standards at some future date (59).

On July 1, 1982, the Medigap Operations Staff (MOS) in HCFA was to implement the Voluntary Certification Program in those States and territories not yet having a panel-approved regulatory program. This program will allow insurers to submit Medigap policies for review. It will then be determined whether these policies meet or exceed certain loss-ratio requirements set forth by law and the minimum requirements prescribed by NAIC. If certification is granted by the Secretary of DHHS, the insurers will be given permission to place a Federal emblem on these policies. MOS will review these policies yearly to determine whether they should be recertified.

In regard to the criminal penalty provisions included in the law, the HCFA Regional Offices (ROs), the Office of Inspector General, the Department of Justice, the State Insurance Departments, and MOS are all working together to implement and monitor these penalties. Quarterly, ROs are required to submit a report to MOS outlining complaints received and actions taken concerning Medigap abuses.

Section 1882(f)(2) of the law required the Secretary of DHHS to submit a report to Congress no later than July 1, 1982, and periodically thereafter, evaluating the effectiveness of the Voluntary Certification Program and the criminal penalties established under this section of the law. MOS will be responsible for preparing this report as well as developing and giving DHHS recommendation as to whether or not the certification program and criminal penalties should be continued (248).

In compliance with Medigap legislation, HCFA's Office of Research and Demonstrations in January 1982 began a study of the comparative effectiveness of State approaches to Medigap regulation. The study, to be conducted in six States, will be used to address whether a mandatory Federal regulatory program is needed to assure marketing of appropriate types of Medicare supplemental policies, whether there are ways in which State regulations can be enhanced, and whether there is a need for standards for other types of policies sold to Medicare beneficiaries. The six States, representative of the regulatory spectrum, selected as survey sites are Florida, New Jersey, Wisconsin, California, Washington, and Mississippi.

As an addition to this study, the National Center for Health Services Research, in cooperation with HCFA, will conduct a supplemental survey to determine the preference and willingness to pay for long-term care insurance (117).

Types of State Regulatory Action

As of early 1979, only a few States such as Wisconsin had taken truly comprehensive action aimed at alleviating Medigap abuses. Over the last few years, though, States have passed meaningful new initiatives to curb abuses. New Jersey, for example, has banned all cancer insurance policies. Massachusetts has established its own dread disease lists, and has set rigorous standards for such policies. Most States have implemented regulations focused either on the insurance provider or on affecting consumer behavior, such as establishing a particular minimum standard (e.g., loss ratios) or strengthening disclosure requirements. The State experience is summarized below in broad areas of needed Medigap reform.

Standardization of Coverage

Several States have taken steps to classify and standardize the kinds of Medicare supplements that can be sold in a State. These steps can help to establish minimum levels of coverage provided by a policy and make it easier for the purchaser to shop for or compare similar policies.

The rationale for the standardization approach is that consumers are unable to choose intelligently among policy forms if the choices available are too numerous and varied. By allowing only a limited number of standard policies, the regulator hopes to enhance price competition by holding other product variables more or less fixed. The standardization approach implicitly assumes that there is a limit to the value of having free competition with regard to insurance product design because consumers have difficulty choosing intelligently among a large number of products with differing configurations.

Each State has taken a different approach. California has established three classes of Medicare supplements: in-hospital expenses only, in- and out-of-hospital expenses, and catastrophic Medicare supplementary coverage. A policy must be appropriately labeled, but no attempt is made to "grade" the policies within a category.

Wisconsin, generally considered a leader in its innovative approaches to the regulation of Medicare supplements, has four clearly defined categories of Medicare supplement insurance and minimum levels of coverage for each category. The policies carry a clear designation of the category on the first page of the policy. Each policy also contains a "caption" which explains the four classes of coverage. All policies approved for sale in Wisconsin must adhere to the standards for one of the four classes of coverage.

In regulations filed in September 1979, Massachusetts established three separate classes of Medicare supplement policies. Unlike Wisconsin or California, however, Massachusetts strictly limits each class of policy as to benefits. Each insurer must offer the exact benefit package which defines a certain class of policy—no more and no less.

Minimum Standards

Many States have specific laws or definite portions of their minimum standards laws that affect the sale of Medicare supplements. These laws vary considerably in their approach, scope, and focus of their provisions.

The thrust of the minimum standards approach is to assure that policies offered for sale provide coverage which is "meaningful" in relation to the purposes for which it is to be sold. Prospective purchasers cannot be expected to recognize all of the health risks they face or to be able to put probability, severity, or cost valences on each risk. A policy that appears to be very complete and generous in its coverage may, in fact, be quite limited when measured by reference to the actual risks the insured faces.

Some of the States with noteworthy minimum standards for Medicare supplements include California, Illinois, Massachusetts, Michigan, Pennsylvania, and Wisconsin. California and Wisconsin are often cited as having some of the most comprehensive minimum standards. Several States also enacted legislation authorizing or directing the insurance commissioner to promulgate minimum standards for Medicare supplements.

Regulation of the Economic Value of Policies

Another approach, diametrically opposed in theory to standardization, is to regulate the economic content of policies by controlling the price which insurers can charge for them. This may take the form of direct rate regulation or its indirect counterpart, regulation of policy loss ratios (i.e., the percentage of premiums returned to the policyholders in the form of benefits).

Many States have now imposed loss-ratio requirements on Medicare supplement policies, some higher than the "benchmark" of 60 percent set by Public Law 96-25 for policies sold to individuals. Minimum Medicare supplement loss ratios range from a low ratio of 60 percent to a high minimum loss ratio of 70 percent for group policies in Connecticut.

There is controversy as to whether loss-ratio information is a useful tool for consumers to employ in comparing policies. The prevalent thinking is that the complexities of loss ratio analysis are too great for laymen to make intelligent use of such ratios as an index of economic value. Loss-ratio monitoring, then, in most of the States in which it is used, has application only as between the insurers and the regulators; it is a regulatory tool rather than a device for improving consumer choice. It might be noted, however, that until mid-1981, Wisconsin included loss-ratio information among the data that it periodically publishes for use by prospective purchasers of Medicare supplementary insurance.

Disclosure Requirements

A predominant approach to Medigap regulation is the provision of information to consumers, either directly or indirectly. Many States have improved their disclosure requirements in an attempt to give the consumer every opportunity to make an "informed" choice. At least nine States mandate the use of a form that outlines benefits and gaps in coverage. Several of these States, including California, Colorado, and Pennsylvania, require the use of this form for all types of health insurance sold to the elderly. Washington, Oregon, and New Mexico require a disclosure form only for Medicare supplements.

The States vary considerably in their disclosure requirements. For example, disclosure forms differ in their structure, content, and use. California is unique in that it requires the use of a separate disclosure form for each of its three categories of Medicare supplements, as well as hospital indemnity and dread disease policies. States such as Colorado and Connecticut, as part of their disclosure requirements, attempt to warn applicants if the sale of any new insurance replaces or adds to existing coverage. Most States (e.g., Montana, New Mexico, Oregon) require delivery of the disclosure form no later than at the time of delivery of the policy. At least one, Wisconsin, is known to mandate the use of a disclosure form at the time of sale.

Very few States require the use of consumer information pamphlets—e.g., Wisconsin at the time of sale and Michigan at the time of delivery. About half of the States do have consumer information pamphlets available for senior citizens. These brochures are normally made available upon request to those over 65 or through general distribution channels. In addition, NAIC and HCFA have prepared a brochure on private health insurance sold to the elderly that is available to all Medicare beneficiaries (233,267).

Through its regional offices and with State insurance departments, HCFA also conducts a nationwide training program for volunteers to assist Medicare beneficiaries wishing help in considering the purchase of private health insurance to supplement Medicare coverage. As of October 1981, HCFA had conducted over 275 Medigap training sessions, for over 13,000 individuals in every State. HCFA's Office of Public Affairs is presently preparing a public service campaign to acquaint Medicare beneficiaries and other affected individuals of the Medigap law and State regulatory programs concerning Medicare supplements. This campaign will be nationwide in scope and provide all entitled beneficiaries with information to help them with their decision to purchase private supplemental health insurance (131).

Strict Enforcement

Even before the Medigap "scandals" of the late 1970's, most States had on their books general laws prohibiting fraudulent or unethical sales practices and unfair or deceptive advertising. They had also had authority to revoke licenses or impose other disciplinary measures on companies or agents found guilty of unethical or unprofessional conduct. Thus, some States reacted to the Medigap issue by simply stepping up their investigatory and disciplinary actions, communicating unequivocally to the insurance industry that abuses will not be tolerated.

Several States, either spontaneously or under pressure from media publicity, have launched substantial investigations to uncover and punish Medigap abuses. At times, these campaigns have focused on particularly abusive companies; in other cases, they have been directed at individual agents. Fines, reprimands, and revocation or suspension of licenses, have been the regulatory weapons employed. Kansas has augmented its strict enforcement policies in recent years with a relatively sophisticated computer system for tracking and analyzing complaint, investigation, prosecution, and sanction data (233).

Conclusion

The last 5 years have been a period of extensive change in the buying, selling, and regulating of Medigap policies. How effective these changes have been, though, is still largely speculative.

The Federal role—for all its hearings, reports, and organizational structure—still represents a basically voluntary approach to the Medigap problem. Sen. Max Baucus (D-Mont.) has stated that the best possible effect of Federal voluntary efforts "would be a much better informed Medicare consumer . . . (that would) make it easier for buyers to identify good insurance policies and make better comparisons before buying." The American Association of Retired Persons, however, has warned that because the program is voluntary, there is potential for abuse (131). It urged consideration of future mandatory certification requirements with set standards for comparison if present efforts are less than adequate.

States, the traditional regulators in the insurance area, have passed new legislation and inplemented new regulations to curb established patterns of abuse. The priority given to such enforcement in each State is not known. It is clear, however, that relying on a State-by-State approach can be expected to result in a diverse approach to the problems, with a corresponding variation in results.

A recent study by Arthur D. Little (9) identified the population 62 years and older and Medicare recipients as demonstrating the lowest level of knowledge of any demographic group in several categories of health insurance information, including cost of coverage and continuance provisions. The study concluded that the population 62 or over and Medicare recipients demonstrated poor knowledge of conditions of coverage for Medicare supplementary policies, that this group could generally not select the policy that provided them with better financial protection, and that a "substantial proportion" believed that more than one supplementary policy is needed to cover the gap in Medicare. The development of health insurance education/information materials and programs for this population remains an important need.

It should finally be noted that the heart of the Medigap problem probably remains with the Federal Medicare program itself. Medicare's complex benefit structure confuses many a consumer, while the continued increase in its deductible and coinsurance clauses worries many a consumer. By paying only about 38 percent of the health care costs of a largely fixed-income group, the Medicare program has understandably continued to generate a market for multiple varieties of supplemental insurance. These supplemental polices have, at the same time, mostly concentrated on the cost sharing for covered services. Even if new regulatory and consumer information strategies alleviate recent Medigap problems, open-ended or catastrophic expenses may pose a substantial problem for elderly people.

The Medigap experience, from a policy perspective, can be used by proponents of greater plan competition as an argument for uniform, standard, simple, yet fairly comprehensive benefit packages for health care consumers, especially the aged. Advocates of greater competition in health care—including proponents of both greater patient cost-sharing measures and greater competition among plans—can also point to Medigap problems as a lesson for avoiding two levels of health insurance that only serve to increase system complexity and cost. Even under the most benign of intentions, complex base plans such as Medicare may result in interacting with and ultimately subsidizing supplemental plans.

Appendix G.—Health Systems Agency of Northern Virginia

The Health Systems Agency (HSA) of Northern Virginia, now in its seventh year of operation, represents an interesting case of the role of HSAs in encouraging competition and the provision of information. This appendix provides a brief summary of the role of health planning agencies in encouraging competition and consumer choice, with specific examples from the northern Virginia agency.

HSAs primarily function as planning and regulatory agencies and have seldom viewed promoting competition as a primary mission. Although the 1979 amendments (Public Law 96-79) to the National Health Planning and Resources Development Act (Public Law 93-641) called on State and local Planning agencies—HSAs and State Health Planning and Development Agencies (SHPDAs)—to make the encouragement of competition one of their priorities in their review activities and in their community development efforts, many agencies have viewed this charge with hesitation and question.

In a recent survey on this subject, several agencies reported that without changing the present reimbursement system, little could be achieved in terms of increased competition (175). Other agencies argued that the tools available to planning agencies are so limited that little can be expected. Since the 1979 amendments, approximately 30 percent of State and local health planning agencies reported that they have changed their certificate-of-need (CON) review criteria to promote competition.

In another survey conducted by the Intergovernmental Health Policy Project (131), 8 out of 45 States responded that they had changed their CON program to foster competition. Types of changes that have occurred include comparative reviews of applications; exclusions for health maintenance organizations (HMOs); dual choice for State employees; revisions in CON review criteria, administrative procedures, and dollar thresholds; procompetitive insurance laws; and better public information about the market.

The HSA of Northern Virginia conducted several activities in which price competition among health care providers was supported. In 1980, the HSA focused attention on end-stage renal disease services. At that time, a proprietary corporation, run by subsidiaries of National Medical Care, Inc. (NMC), operated all of northern Virginia's outpatient maintenance kidney dialysis services. The HSA of Northern Virginia attempted to (80):

- increase the number of physicians from which kidney disease patients could choose in the existing outpatient facilities;
- confront restrictive policies that limited medical staff privileges to physicians' owning or operating the NMC dialysis facilities (new policies were set to allow any qualified physician to treat a dialysis patient);
- encourage the development of new independent dialysis services to reduce the domination of a single proprietary corporation; and
- encourage new services to base their charges on the cost of providing services instead of the higher Medicare fee, thereby promoting price competition.

To date, the HSA of Northern Virginia reports that over one-half of the maintenance dialysis facilities have changed their closed medical staff policies and that NMC's market share has decreased with the development of new and competing dialysis services.

An example of health planning activities aimed at increasing consumer knowledge about health care services was the Northern Virginia HSA's development of the *Northern Virginia Directory of Physicians, 1979* (194). According to Mark Epstein, the Assistant Director of the Northern Virginia HSA, consumers were experiencing difficulties in choosing physicians in such a transient area. As a result, the HSA decided to compile a physician directory and contacted the Northern Virginia Medical Society for assistance in designing the questionnaire and in encouraging area physicians to participate. Because of the State Medical Practices Act restriction on physicians' advertising, the medical society initially did not get involved. The Northern Virginia HSA then successfully persuaded legislators to change the State law so that physicians were permitted to advertise. This cleared the way for the medical society's and individual physicians' involvement (80).

In the directory, the following types of information were collected:

- *Introductory information.*—Type of practice (fee-for-service or prepaid group practice, solo or group), type of support services in office, sex of physician.
- *Availability.*—Appointment only, accepts new patients, office hours, phone consultations, house calls, waiting room time, language spoken, access

to transportation services and parking, handicapped accessibility.

- *Practice information.*—Tests available in office (complete blood count, etc.), fee and time for results, tests available in building.
- *Education, certification, and affiliation of physician.*—Schools graduated from, specialty certification, hospital affiliation.
- *Fees and billing.*—Standard fees; use of usual, customary and reasonable charges, credit card policies; complaints; billing policies. (Note: no specific fees were included in the directory.)
- *Health insurance.*—Blue Cross/Blue Shield, Medicare, Medicaid, Medicare fee schedule as payment in full, computes patients' insurance forms at no charge, bills insurance directly and waits for payment.
- *Counties covered.*
- *Health maintenance organization information.*—practice information, availability, staff support service.

The *Northern Virginia Directory of Physicians,* while comprehensive in description, does not provide actual physician fees, quality rankings, or comparisons of services. Over 12,000 directories were disseminated to the public at no cost. Owing to staffing limitations and budget cutbacks, it is questionable whether the directory will be updated. With the assistance of the Fairfax County Office on Aging, the HSA has also prepared a directory of nursing home services in northern Virginia.

In addition, the HSA of Northern Virginia collaborated with the Montgomery County (Md.) Department of Health Systems Planning, the District of Columbia SHPDA, and the HSA of Southern Maryland in setting up the Metropolitan Tertiary Care Task Force to study the regionalization of tertiary care services (80). Cardiac surgery and cardiac catheterization were the first technologies to be assessed. The purposes of the study were: 1) to determine the Washington area's capacity to perform cardiac catheterization and cardiac surgery, 2) to assess if this capacity is sufficient to meet the projected demand, and 3) to identify where these services should be located.

HSAs first analyzed the heart disease mortality rates for 1977. Wide variation was found in the heart disease mortality rate per 10,000 population in the four planning areas: D.C.—31.7, Montgomery County—22.5, northern Virginia— 17.2, and southern Maryland 16.3. They noted in their report that data on health status are not adequate for predicting the need for cardiac catheterization services for the following reasons (178):

> 1) sufficient data on the incidence of treatable heart disease do not exist; 2) a single patient may require repeated cardiac catheterizations to perform a variety of tests (there presently are no data on the frequency of repeat catheterizations); and 3) catheterizations to substantiate negative findings are not reflected in heart disease incidence or prevalence data.

Besides the difficulties with health status data, other factors may affect future need for specialized cardiac care services. First, the technology is constantly undergoing change and innovation (e.g., intra-aortic balloon assist and external cardiac assist devices.) The use of beta blockers is another technological innovation that may influence the use of tertiary cardiac care services. In addition, evidence regarding the effectiveness of coronary artery bypass surgery is insufficient to warrant its consideration as a major treatment for prolonging life for heart disease patients.

A technical advisory panel to the Tertiary Care Task Force, made up of Washington D.C., area experts in open-heart surgery and cardiac catheterization, estimated the number of surgical procedures that should be performed to maintain an adequate volume for quality care: 360 open-heart procedures by a single cardiac surgical team in a dedicated operating room and 200 in a multipurpose operating room (178). These recommended utilization rates were then compared with the surgical capacity and estimated number of procedures at the seven Washington area non-Federal hospitals in 1978: Georgetown University Hospital, George Washington University Hospital, Howard University Hospital, Washington Hospital Center, Washington Adventist Hospital, Fairfax Hospital, and Children's Hospital.

The Tertiary Care Task Force found that only three hospitals—Washington Hospital Center, Fairfax Hospital, and Children's Hospital—were operating at a sufficiently high volume to assure quality care, as defined by the expert panel. None of the Federal hospitals (Veterans Administration Hospital, Walter Reed Army Medical Center, National Institutes of Health Clinical Center, and National Naval Medical Center) met the open-heart utilization standards. In other words, the majority of Washington area hospitals were doing less than the recommended number of cardiac procedures.

In addition to examining utilization as a measure of quality (and cost), the task force also studied mortality rates and suggested the following guidelines (178):

1. The mortality rate in the 30-day period following:
    - adult open-heart surgery should not exceed 5 percent for coronary bypass surgery, and 10 percent for all other types of cardiac surgery
    - pediatric heart surgery should not exceed 25 percent for patients under 1 year of age and 10 percent for all other pediatric patients (i.e., patients 1 to 14 years of age)

2. The mortality rate in the 24 hours following cardiac catheterization should not exceed 1 percent for adult patients and 3 percent for pediatric patients.

In 1978, the task force found the highest mortality rates at Children's Hospital (15 percent), Georgetown University (10 percent), Howard University (10 percent), and Washington Adventist Hospital (8 percent) (178). The high mortality rate at Children's Hospital may be due to the already high-risk infants that make up a large proportion of the caseload. At Georgetown, the high mortality rates may be due to the more complex valvular surgery performed there.

These findings, as reported by the Washington press, criticized the heart surgery programs of the low-volume, high-mortality hospitals (42). To improve this situation, the task force recommended more cooperation and referral among area hospitals. It specifically recommended that *all* pediatric cardiac surgery should be performed at Children's Hospital, and affiliations among other facilities should be expanded since "the demand does not appear sufficient to sustain six programs" (178). After this critical review of cardiac care by health planning agencies, experts, and the press, the press noted anecdotal reports of people who canceled surgery scheduled in low-volume hospitals (146).

This case illustrates the potential effect of information related to quality of care. Since publication of the initial report in December 1978, several hospitals in the metropolitan area have hired new cardiac specialists and increased their open-heart operations dramatically, bringing them within the acceptable range according to the cardiac guidelines (179). Only one hospital maintains a cardiac program below the acceptable utilization standards. Moreover, the mortality rates at the hospitals with increased volumes have improved, while the hospital with the lowest volume reports the highest mortality rate.

Appendix H.—Baltimore City Professional Standards Review Organization

Background on PSROs

Professional Standards Review Organizations (PSROs) were mandated in 1972 (Public Law 92-603) to review the utilization and quality of Medicare, Medicaid, and Maternal and Child Health services. These private, nonprofit corporations were set up for peer review and cost containment purposes. To achieve their goals, PSROs are required to collect a standardized set of data on each hospitalized Medicaid and Medicare patient. These data include diagnoses, procedures, average lengths of stay (ALOS), and mortality rates. Profiles of physician and hospital delivery patterns can then be prepared.

PSROs are also required to conduct quality of care reviews termed medical care evaluation (MCE) studies. A specific diagnosis or procedure in one or more hospitals is compared with specific quality of care criteria (recommended volume of procedures or indications for surgery), and improvements are recommended. If, for example, the PSRO determines that hospitalization or surgery is unnecessary or ALOS excessively prolonged, sanctions can be brought to bear against the hospital. These may include not only complete reviews of admissions or lengths of stay, but also withholding of Medicare and Medicaid payment.

While PSROs are one of the few agencies that systematically collect quality of care information on hospitals and providers, public access to these data has been somewhat limited, particularly access to physician-specific information. Some of the reasons for restricting disclosure, according to PSROs, are to protect patient privacy and the physician-patient relationship and to prevent unadjusted analyses of raw data. The issue of disclosure of PSRO information to the public has been much debated. Ted Bogue, formerly of Ralph Nader's Public Citizen Health Research Group (HRG), disputed the problems of disclosure to the public and local and State health agencies (21):

> . . . Contrary to the claims of doctors, patient privacy and the doctor-patient relationship would not in any way be compromised by public access to physician-specific information, so long as patients could not be identified.
>
> There is some concern that PSRO data could mislead the public because comparisons among providers would be invalid. Provider profiles and MCEs could be adjusted by the PSRO for variations in patient age and diagnostic mix as a normal part of review activities. In addition, both the PSRO and the doctor or hospital under review could given an opportunity to attach explanatory material to whatever is released.

In a 1977 law suit, HRG charged that the National Capital Medical Foundation (the Washington, D.C., PSRO) withheld public information on utilization and quality of medical services. HRG requested these data under the Freedom of Information Act since, it argued, PSROs serve as Federal agencies. A decision in favor of HRG was handed down by the District Court in 1978. In response, PSROs, the Department of Health and Human Services (DHHS), provider groups, and Congress became embroiled in plans to appeal the decision, design confidentiality regulations, and place a moratorium on the final order.

A 1-year delay was approved, followed in 1981 by a reversal in the lower court holding that PSROs are not Federal agencies as specified under the Freedom of Information Act. In the meantime, the Institute of Medicine (IOM) was commissioned by Congress and DHHS "to study the public policy issues raised by the controversy and recommend a course of action" (184).

IOM recommended that there be clear limits on access to physician-specific information and quality of care studies performed by PSROs, and the court's ruling was in line with this recommendation. On the other hand, IOM recommended that hospital-specific information be made available to the public. The IOM committee also called for PSROs to take more initiative in informing the public about the type and effectiveness of health care in their areas. They suggested that this information, written in a form usable to consumers, might be disseminated as an annual report. IOM summarized the committee's findings (184):

> The public, including the press and health planning agencies, should be able to obtain: 1) utilization data about identified institutions in the form of both data tapes and profiles produced by PSROs, and consisting of data elements that PSROs are required to collect for patients whose care is reimbursed by the Federal Government; 2) coded practitioner data, but with some safeguards to limit the deductive identification of specific practitioners; and 3) unidentified quality review study information, including anonymously displayed performance data about institutions or comparisons among them.

The issue of public disclosure of routinely collected PSRO data is closely related to consumer information and choice. Consumers can, with limited difficulty, obtain information on physician credentials and fees. However, little quality of care information is presently available to consumers. Bogue describes the types of quality information that would be useful to consumers (179):

> What consumers need is objective, accurate, meaningful information on the "track record" of individual

doctors and hospitals. What kind of patients do they treat, how long do they hospitalize patients, and what is their complications or mortality rate as compared to other providers treating comparable patients? Such information is crucial to fully informed consumer choice. For example, one study showed that post-surgical mortality is more than twice as high in some hospitals as in others, even after statistically adjusting for differences in patient age, medical condition, and other characteristics. Surely, no information could be more critical to a patient considering surgery.

Baltimore City PSRO

The Baltimore City PSRO is one PSRO that prides itself on the fact that data about hospital and physician utilization, costs, and outcomes of care are not confidential. Beginning in 1972, the State Medical Society set up the Maryland Admissions Review Program (MARP) to review hospital utilization for Medicaid patients. As a result of MARP's efforts at reducing unnecessary hospital utilization, it was possible to expand the scope of Medicaid benefits and eligibility criteria to cover more low-income people.

In addition, MARP found that a great deal of excessive hospitalization was the result of elderly patients' awaiting placement in long-term care facilities. As a result of these findings, the Baltimore PSRO investigated placement and utilization in chronic disease hospitals and found between 7 and 50 percent inappropriate placement. "BC-PSRO's [The Baltimore City PSRO's] report clarified that the backup of patients in hospitals was caused not by a lack of chronic hospital beds, but rather by problems in placing patients in nursing homes" (5).

Continuing their efforts to improve care for the elderly and reduce unnecessary use of Chronic Disease Hospitals and Skilled and Intermediate Care Facilities, the Baltimore City PSRO received Federal authority in 1978 to add nursing homes to its review. With the assistance of the State, the Federal Government, the local HSA, and the nursing home industry, the PSRO instituted the following measures: changes in reimbursement, grants to facilities with "hard to care for" patients, and new definitions of levels of long-term care.

Not until 1974 was the Baltimore City PSRO actually established. Many of the functions and physicians involved with MARP also took part in the newly formed PSRO. The purpose of the Baltimore City PSRO was to (5):

> . . . assure that health care paid for by the Federal or State Government is medically necessary and consistent with professionally recognized standards of care. It also seeks to encourage the use of less costly sites and modes of treatment where medically appropriate.

Standards for medical care are set by the American Medical Association (AMA) and specialty societies, and compared with patient records to determine medical necessity and appropriateness. Hospital and physician profiles are then developed retrospectively to monitor delivery patterns and quality of care.

Beginning in 1979, the Baltimore City PSRO developed the Maryland Hospital Utilization Reporting System. This system, with nonconfidential data from the PSRO and the Maryland Health Services Cost Review Commission (HSCRC), profiles patients, physicians, and hospitals on a semiannual basis. In 1980, it became operational with data from 1978-81.

For each patient, the HSCRC report contains the following information:

1. hospital number;
2. physician number;
3. medical record number (only when report is confidential);
4. principal diagnosis;
5. secondary diagnosis;
6. principal procedure (with or without operation);
7. operating physician (performing the principal procedure);
8. age of patient;
9. total charge (daily room charge + seven ancillary charges—operating room, drugs, X-ray services, lab services, supplies, therapy services, all other);
10. length of stay;
11. preoperation stay (difference in days between the date of admission and date of principal procedure);
12. admitting type (elective, emergency, urgent);
13. admission day;
14. discharge day;
15. patient disposition (home/self care, short-term general hospital, left against medical advice, to skilled nursing facility, died); and
16. payment source (Medicare, Medicaid, Blue Cross, other insurance company).

The utilization figures are then compared with the physicians' and State's average, to compare hospitals and physicians and to assess ALOS by diagnostic-related grouping (DRG).

Unlike other peer review groups and rate-setting commissions in other States, those in Maryland operate under State legislation that all cost and utilization information, other than that regarding patients, be nonconfidential. With the cooperation of the HSCRC, the PSRO, hospitals, and medical societies, it is possible to generate a wide range of quality information. Physician-specific data are collected on types of cases (by DRG); number of patients, and ALOS. From these data, comparisons can be made with the area average to calculate, for example, days above average. Hospitals are then in a position to review and improve on the utilization patterns of their staffs.

In addition to data on hospital and physician utilization, charge data are collected on each patient by DRG, by age, and by length of stay. These charge data pertain to Medicare, Medicaid, Blue Cross, and "all other" patients, and are broken down according to charges for hospital days, operating room, drug, X-ray, lab, supply, therapy, and other services. For each cost report, the hospital and physician number are identified.

The Baltimore City PSRO has worked closely with the HSCRC to improve the quality, efficiency, and competitive practices of health services in the Baltimore area. Both groups believe that by disclosing hospital and physician information they can generate public accountability and improve health services.

The Baltimore City PSRO (4) reports that physician review based on the HSCRC data base has resulted in major reductions in lengths of stay. Four hospitals that previously had the highest ALOSs accounted for the majority of the improvements. The reduction in ALOS came not only from Medicare and Medicaid patients but also from the patients of Blue Cross and other third-party payers. An estimated $8 million was saved in the last 2 years as a result of these efforts (4):

> Baltimore City hospitals have traditionally longer patient stays for similar illnesses than have the other hospitals within the State. Based on calculations for similar illnesses, local hospital lengths of stay in the first half of 1978 exceeded the State average by .70 days per admission or more than 128,000 days above average per year. By the first half of 1980, this difference had been reduced to .55 days per admission or more than 105,000 days of care per year.

The remaining 105,000 days above average in Baltimore City are partially the result of special care units (newborn intensive care, shock trauma, psychiatric, etc.) and back-up days in hospitals while Medicare and Medicaid recipients await admission to nursing homes. The PSRO, the Department of Health and Mental Hygiene, and the local Health Systems Agency (HSA) are working together to address this latter problem as well as to determine the causes for the remaining excessive ALOSs. According to Alvin Ankrum, the PSRO's Executive Director, the Baltimore City PSRO seeks to bring about efficiencies in the following areas: delivery of care (i.e., reduction in ALOS); cost of care delivered (i.e., reducing fixed and variable costs or cost per day); and appropriate setting for delivery of care (i.e., decrease in hospitalizations). To accomplish these changes, it is useful to be able to accurately document a problem and provide comparable data as well as to monitor changes and sanction of reward hospitals accordingly.

Recently a Health Care Coalition has formed in Baltimore, made up of private employers interested in health care cost control. Employers like Bethlehem Steel, Baltimore Gas & Electric, and Maryland National Bank are working with the PSRO to examine hospitals' efficiency and average charges by payment source for a range of conditions. The PSRO has conducted data seminars for employers to better understand the use the HSCRC data set. As a result, employers and unions are in a better position to select more effective and efficient health insurance plans and to advise their employees about using different hospitals.

Several organizations use these nonconfidential data, in some cases as a basis for sanctions. For example, the Baltimore City PSRO, as part of its peer review system, regularly examines hospital performance using these data, often with involvement from Blue Cross. The local HSA uses the data to determine the need for construction and expansion and to judge certificate-of-need applicants. The Maryland HSCRC is able to set hospital rates based on patients seen and performance guidelines. State licensure and the Joint Commission on Hospital Accreditation provide additional impetus for improvements. The Baltimore City PSRO suggests that hospitals improve their performance because it is "observable by the public."

Appendix I.—Other Models of Information Disclosure: Truth-in-Lending Act and Securities and Exchange Commission

Truth-in-Lending Act

Background

Fifteen years ago, if an individual wanted to take out a $1,000 loan for 3 years at the best interest rate available, and called several different financial institutions to compare interest rates, the person might have heard:

- $6 per $100,
- $1,000 at 7 percent interest, and
- interest amounts to a 10 percent annual percentage rate

While the first two quotes might have appeared to be the best buy, the annual percentage rate (APR) on these two offers could have been as high as 12 and 14 percent, respectively. Therefore, it is the last loan offer that might have given the consumer the least amount of interest payment.

Before the Truth-in-Lending Act (title I of Public Law 90-321, the Consumer Credit Protection Act) was passed in 1968, consumers who shopped for loans were easily confused by the different methods used by creditors and financial institutions to compute interest rates on loans. Because there was no standard terminology to inform consumers of the real cost of a loan, it was impossible to compare interest rates on loans without a great deal of difficulty (258).

The Truth-in-Lending Act provides for disclosure of the price and terms of consumer credit.[1] The act has two primary purposes: to enhance competition between lenders and to promote the informed use of credit.

In its original form, the Truth-in-Lending Act consisted of three chapters which provided for credit cost disclosures and regulated the advertising of credit. The act did not attempt to prescribe the conditions under which credit could be made available, but rather required creditors to make accurate and complete disclosures of credit costs and terms and prohibited misleading or inaccurate advertisements for credit. Since the time of its passage, the Truth-in-Lending Act has also been used as a vehicle for the regulation of other areas.

In 1974, the passage of the Fair Credit Billing Act amended the Truth-in-Lending Act by adding a fourth chapter, titled "Credit Billing," which regulated the activities of credit card issuers. In 1976, the passage of the Consumer Leasing Act added a fifth chapter, titled "Consumer Leases," which extended the coverage of the Truth-in-Lending Act to regulate the disclosure of terms and costs of leases of goods for personal use for individuals.

The Truth-in-Lending Act applies to all extensions of credit for which a finance charge is or may be imposed, except for areas such as stockbroker margin loans and utility charges subject to State regulation, and credit for agricultural purposes above a specified amount. The act distinguishes two major types of consumer credit: "open-end" and "credit other than open-end" or installment credit. Open-end credit, such as bank or oil company creditor credits and store charge accounts, allows consumers to incur debts from time to time under an agreement which prescribes charges in return for use of the privilege. Installment credit is extended once in a specific amount and the credit balance outstanding reduced by one or more subsequent payments. There are separate disclosure requirements for open-end and installment credit.

The Truth-in-Lending Act also regulates advertising of credit. Specifically, the act prohibits credit advertisements which indicate that credit will be available in certain amounts or with certain down payments, unless the creditor usually makes credit available to consumers under time terms; and prohibits advertisements which set forth certain specific credit terms, unless other terms are also set forth. The purpose of these provisions is to promote consumer reliance on the full range of credit terms rather than on single items which might be misleading.

Another provision of the Truth-in-Lending Act provides consumers with the right to rescind certain transactions in which a security interest in a residence is taken.

The Truth-in-Lending Act provides for criminal and civil penalties for noncompliance. In 1974, the passage of Public Law 93-495 distinguished civil penalties to which creditors would be subject in class actions.

The Board of Governors of the Federal Reserve System has the responsibility for issuing regulations to enforce the act. Enforcement is divided among the following agencies: the Board of Governors of the Federal Reserve System for all State chartered member banks, the Comptroller of the Currency for national banks, the Board of Directors of the Federal Deposit Insurance Corporation for all federally insured banks other than members of the Federal Reserve System, the Federal Home Loan Bank Board for all federally chartered or insured savings and loan institutions, the Administrator of the National Credit Union Administration for all federally chartered credit unions, the Civil Aeronautics Board for all air carriers subject to the Federal Aviation Act of 1958, the Secretary of Agriculture for entities subject to the Packers and Stockyards Act, the Farm Credit Administration for any Federal Land Bank and Federal Land Bank Association, Federal intermediate credit bank, or production credit association, and the Federal Trade Commission for all other granters of credit.

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[1] The remainder of this section is condensed from Curtiss Martin, *Federal Consumer Protection: A Summary and Overview*, February 1977 (168).

Discussion

The experience of operating under the Truth-in-Lending Act, in effect since 1969, has led to some questions about its effectiveness. The question of primary concern has been whether the act is overly complex. The answer to this question as a practical matter, however, is dependent on a number of narrower questions. These include the questions of whether the emphasis and scope of the required disclosures provide the most important information to consumers in a manner which best enables them to comprehend and utilize it; whether the civil liability provisions of the act are achieving their intended objective of compelling compliance in a cost-effective manner; and whether the benefits of the act outweigh the administrative costs imposed. Other areas of concern arise in connection with certain specific provisions and trends in the types of provisions which were added to the act.

Examinations of the effect of the Truth-in-Lending Act in its present form have been limited primarily to tests of consumer awareness of finance charges and percentage rates, but have also included some examinations of consumer behavior. Collectively, the information available (see, e.g., 74,183,185) suggests the following:

- the Truth-in-Lending Act has increased consumer awareness of credit costs, although many consumers remain unaware of credit costs;
- studies based on consumer awareness of annual percentage rates show that awareness is greater among the more educated, higher income segments of society although lower income, less educated consumers may be equally aware of dollar finance charges;
- awareness of credit costs appears to be linked to comparison shopping for credit on the basis of price;
- awareness of credit costs does not appear to be associated with decisions to use or not use credit; and
- to an extent, creditors compete on the basis of terms such as amount of down payment and length of repayment time as well as annual interest rate. In the case of retailers, competition in the form of the quality and price of the goods or services offered largely overshadows price competition in the credit area.

Although this information is useful to the extent that is assesses the effect of the primary provisions of the Truth-in-Lending Act on consumers, it does not provide a great deal of guidance about how to improve the act. None of the studies conducted has examined the question of whether consumers benefit from the disclosures other than the annual percentage rate and the finance charge. The studies have not addressed the question of whether the extensiveness of disclosures impedes the understanding of individual disclosures. This information could provide a great deal of guidance in any attempts to improve the functioning of the act.

Like their purchases of credit, consumers' purchases of medical care under procompetitive proposals would involve decisions about matters of high technical knowledge and risk. Experience with the Truth-in-Lending Act provides an instructive example of the benefits of a standard terminology for specified consumer transactions that are otherwise subject to misunderstanding and possible abuse. Standardization in the area of credit has had the apparent effect of increased consumer information and improved comparison shopping. Federal, State, or local governmental standardization of the format and distribution of information about insurers and providers merits further examination in the context of proposals to increase competition in health care.

Securities and Exchange Commission

The Securities and Exchange Commission (SEC) was created by section 4(a) of the Securities Exchange Act of 1934. Establishment of SEC to police the Nation's capital markets was an attempt "to purge the securities exchanges of those practices which have prevented them from fulfilling their primary function of furnishing open markets for securities where supply and demand may freely meet at prices uninfluenced by manipulation or control" (265).

Widely regarded as one of the more prestigious and effective of the Federal regulatory agencies, SEC has the broad charge of protecting investors and maintaining fair and orderly markets. This charge grew out of the stock market crash of 1929 and the perception that fraud, security price manipulation, short selling, pooling, and other unsavory investment practices were the root of the ensuing Great Depression. SEC, which actually was not launched until nearly 5 years after "the crash," was perceived by the public as the mechanism that would offer protection against unscrupulous inside traders and security issuers and perhaps even against future security losses.

The major responsibilities of SEC fall into two areas, which have bases in the historical development of capital market regulation. First, the commission is most active in managing corporate disclosure programs, via oversight of accounting organizations and exchanges. Secondly, the commission is concerned with establishing and enforcing codes of conduct for brokers and dealers, particularly with respect to fraud and stock price manipulation (221).

SEC is directed by five commissioners, no more than three of whom may be from the same political party. Members of the commission are appointed by the President of the United States with the approval of the Senate. Each commissioner is appointed for a 5-year term, with one member's term expiring in June of each year. The President designates one member to chair the panel. The commission is assisted by a staff of professionals including accountants, engineers, examiners, lawyers, and securities analysts that staff the five SEC divisions—Corporation Finance, Market Regulation, Enforcement, Corporate Regulation, and Investment Management Regulation (249).

The SEC disclosure system requires public reporting of standardized information through certain periodic reports from registered corporations and certain reports registering newly issued securities. In 1975, 56,640 periodic disclosure reports were filed by approximately 10,000 corporations, and 2,813 new issue registration documents were accepted by SEC.

Once a decision is made by a corporation to raise capital through a public offering of securities, the corporation must register and report information to SEC through standardized agency forms or statements. There are more than 20 different forms for various types of companies and special situations. Regardless of the form used, certain information is common to all: 1) nature and history of the issuer's business; 2) its capital structure; 3) a description of any material contracts including bonus and profit-sharing arrangements; 4) a description of the securities being registered; 5) salaries and securities holdings of officers and directors; 6) details of any underwriting arrangements; 7) an estimate of the net proceeds and the uses to which such proceeds will be put; and 8) detailed financial information, such as a summary of earnings, certified balance sheets, profit and loss statements, and supporting schedules (249).

As securities are traded continuously over many years, there is ongoing disclosure of company activities through annual, quarterly, and special reports. The annual reports are scrutinized by SEC to ensure that a policy of satisfactory financial reporting is practiced. Information is reviewed for compliance with specific statutes, and for completeness and fairness of disclosure. Most of the material is available to the public (249).

The number of companies reporting and the types of reports required have grown substantially since the enabling legislation was passed in the early 1930's, and this expansion of the corporate disclosure system appears to be accelerating. Some examples of this expansion include disclosure by bank-holding companies, disclosure of management perquisites, overseas payment, replacement cost accounting, and segmental or line-of-business accounting (221).

In noting the registration process and the SEC reporting requirements, it is important to keep in mind that SEC's intent is not to judge the merits of securities offered for sale. Furthermore, the SEC review process does not guarantee completeness or accuracy in the reports filed with SEC, although severe penalties are imposed for presenting false and misleading information and other fraudulent acts. Any deficiencies are the responsibility of the company and the individuals involved, and the final judgment on any investment opportunity presented by an offering rests with the potential investor.

A second important point to make is that SEC registration involves a significant amount of corporate time and expense. Registration is a detailed, often lengthy process, and can require simultaneous attention in several corporate divisions. It is estimated that the average cost of initial registration of securities with SEC is now over $200,000. Likewise, the continuous reporting requirements and related costs of being a "public company" may be substantial. For many small companies, such overall information disclosure costs are prohibitive (249).

But, like most regulatory programs, SEC's corporate disclosure system was designed to remedy a perceived market failure. In this case, the market failure involved an allegedly fragile capital market where securities prices were said not to reflect available information and price manipulation was considered to be rife. The main rationale for corporate disclosure was that better information about corporations would improve the pricing mechanisms through the buying and selling activities of better informed investors. According to this theory, if investors know more of the truth about the corporation, they will be able to make more intelligent investment decisions. Through this market activity, the stock would be more fairly priced, and the task of price manipulators would be more difficult (221).

State, local, and Federal bodies, following the SEC model, could require health plans to provide basic minimum information such as premiums, ambulatory and hospital utilization rates, disenrollment rates, board certification, and so on. As with SEC, health plans would have to attest to the accuracy and truthfulness of presented data, subject to civil and criminal penalties (79,156,175).

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INdex

Index

- Advertising
  - effect on health care prices, 77, 78
  - by Federal Employees Health Benefits Program (FEHBP), 77
- Aetna Life & Casualty, 76, 87, 90, 91, 94, 95, 96, 100, 105
- Aid to the Blind, 118
- Aid to Families With Dependent Children (AFDC), 60, 118
- Aid to Old Age Survivors, 118
- Aid to the Totally Disabled, 118
- Alternative delivery systems
  - regional examples of, 107-117
  - technology used in, 37
- Altman, Stuart H., 84
- Ambulatory physician services, 39-40
- American College of Physicians, 68
- American Medical Association (AMA), 85, 102, 133
  - Group Practice Register, 111
- Ancillary technology, 40
- Ankrum, Alvin, 134
- Arapahoe Health Plan of Denver, Colorado, 117

- Baltimore Gas & Electric Co., 134
- Baucus, Senator Max, 127
- Bethlehem Steel, 134
- Blue Cross/Blue Shield, 38, 39, 40, 48, 85, 87, 89, 90, 91, 94, 95, 96, 113, 115, 134
  - consumer information provided by, 76
  - efforts to identify nonbeneficial procedures, 68
  - establishment of HMO Colorado by, 116
  - high-option plan coverage in the Federal Employees Health Benefits Program, 98-101
  - Medical Necessity Program, 58
  - programs in California, 115
  - programs in the Rochester, N. Y., area, 107-108
  - suit against Office of Personnel Management, 105
- Blue Cross of Minnesota, 114
- Blue Cross of Northern California, 115, 116
- Blue Cross of Southern California , 115
- Breslow, Lester, 83

- California
  - alternative delivery systems in, 114-116
  - prepaid Medi-Cal health plans (*also see* Medicaid, Medi-Cal), 118-119
- Capitation
  - effect on fee-for-service incentives, 19
  - payment by Medicare, 43, 66
  - payment by Medicaid, 66
- Cargill Co., 113
- Certificates of need, 129
- CHAMPUS (*see* Civilian Health and Medical Program of the Uniformed Services)
- Children's Hospital (Washington, D.C.), 130
  - cardiac mortality rates in, 131
- Civil Aeronautics Board, 136
- Civil Service Commission (CSC), 85, 86, 102, 103
- Civilian Health and Medical Program of the Uniformed Services (CHAMPUS), 108, 109
- Competition
  - comparison of proposals to increase (table), 23
  - among comprehensive health care organizations, 8-9, 10-11, 22-23, 32, 48-50, 63-67, 107
  - concept of, 24-26
  - Consumer Choice Health Plan, 22-23
  - consumer information needs under increased, 71-80,
  - cost consciousness and, 23-24
  - effects on medical technology use and innovation, 31-50
  - effects on quality of care, 9-11
  - emphasis areas, 27-28
  - and medical care market, 26-27
  - and medical care quality, 55-68
  - and medical technology use and innovation, 31-50
  - participants and choices to be made under increased (table), 19
  - patient cost sharing and, 7-8, 20-21, 45-48
  - proposals to increase, 5-7, 19-24
  - strategies for increasing, 4
- Comprecare of Denver, Colorado, 117
- Comprehensive health care organizations, 22-23, 32, 48-50, 63-67
- Comptroller of the Currency, 135
- Computed tomography, 31-32
- Congress
  - acts of (*see* Legislation)
  - commissioning of study by Institute of Medicine, 132
  - Congressional Budget Office (CBO), 99
  - House Committee on Energy and Commerce, 3, 83
  - House Committee on Post Office and Civil Service, 103
  - House Select Committee on Aging, 122
  - House Subcommittee on Retirement and Employment Benefits, 103
  - mandate for Health Care Financing Administration survey of elderly insurance consumers, 80
  - Senate Committee on Labor and Human Resources, 3, 83
- Consumers
  - information needed by, 11-12, 73-78
  - information needed by (table), 74
  - initiation of care by, 72-73, 75
  - selection of health insurance plans by, 71-72
  - selection of technologies by, 72-73
- Control Data Corp., 113
- Copayment (*see* Cost sharing)
- Cost sharing
  - effect on initiation of care by patients, 75
  - effect on medical technology, 45-48, 61-62
  - effect on quality of care, 9-10, 59-63, 66
  - as incentive to search for lower priced care, 78-79
- CT scanning (*see* Computed tomography)

Day. Roger C., 123
Denver, Colo., 116-117
Department of Health, Education, and Welfare (*see* Department of Health and Human Services)
Department of Health and Human Services, 86, 87, 119, 123
Deuschle, Kurt, 84

Eastman Kodak Co., 107
Electroencephalography, 44
Enthoven, A. C., 109, 22-23
Epstein, Mark, 129
Estes, Carroll, 84

Fairfax County (Virginia) Office on Aging, 130
Fairfax (Virginia) Hospital, 130
Farm Credit Administration, 136
Federal Deposit Insurance Corporation, 135
Federal Employees Health Benefits Program (FEHBP), 12, 37, 64, 76, 80, 108, 109
  advertising by, 77
  benefit costs as percentage of subscription income (table), 90
  benefit variation across plans, 87-88
  Blue Cross/Blue Shield high-option plan enrollees in, 98-101
  choices by annuitants and the elderly in, 96-98
  comparison with Medicare, 87
  competition within, 87-91
  cost incentives in allocation of premiums (table), 89
  cross subsidies in, 88-90
  health insurance categories of, 86
  history and structure of, 85-87
  incentives for cost consciousness, 88
  low-option experience of, 90-91
  problems of, 106
  quality assurance of, 101-102
  selection and utilization of services, 91-101
Federal Home Loan Bank Board, 135
Federal Reserve System, 80
  enforcement of the Truth in Lending Act by, 135
Federal Trade Commission, 108, 122
  enforcement of the Truth in Lending Act by, 136
Fee-for-service practices, 36, 37
  v. health maintenance organizations, 65-66
Fein, Rashi, 83, 84
Feldstein, M. S., 20-21
Fetal monitors, 44
Finger Lakes (New York) Health Systems Agency, 107

General Accounting Office (GAO), 103
General Mills, 113
General Motors Corp., 107
Genesee Valley Group Health Association (GVGHA), 107, 108
Georgetown University Hospital, 130
  cardiac mortality rates in, 131
George Washington University Hospital, 130
  cardiac mortality rates in, 131
Glasser, Melvin A., 84
Glossary
  of acronyms (*see* p. xi)
  of terms (*see* pp. vii-viii)
GHA (*see* Group Health Association of Washington, D.C.)
GNP (*see* gross national product)
Government Employees Health Association (GEHA), 88, 104
Grand Coulee Dam, 41
Gross national product (GNP), 17
Group Health Association of America (GHAA), 104
Group Health Association (GHA) of Washington, D.C., 38, 67, 87, 94
Group Health Cooperative of Puget Sound, 38, 45, 67
Group Health Plan of Minneapolis-St. Paul, 112, 113
Group practices, 48

Hawaii
  alternative delivery systems in, 108-111
  Community Health Program of, 108
  competition and utilization patterns in, 108-110
Hawaii Medical Service Association (HMSA), 38, 108
Health care alliance (HCA) (*see* Health insurance)
Health Care Financing Administration (HCFA)
  Bureau of Program Operations, 123
  congressional mandate to survey elderly insurance consumers, 80
  consumer information provided by, 80
  Medigap Operations Staff, 125
  review of health insurance policies by, 79
Health care, 17
Health Insurance Plan of New York, 38, 43, 45, 67
Health insurance
  for catastrophic illness, 20-21, 24
  comprehensive coverage by, 23
  consumer information provided by carriers, 76
  cost consciousness and rates for, 23-24
  effect on use of medical technology, 17-19, 33
  exclusion of preventive technologies by, 75
  differences among plans, 73-74
  growth stimulation by taxation policy, 17-18
  major risk insurance proposal, 20-21
  Medigap legislation, 120-128
  patient cost sharing and rates for, 20-21, 23
  plan selection by consumers, 71-72, 73-75
  population covered by, 72
  private insurance and its problems, 120-122
  public knowledge of information on, 127
  risk rating for, 23-24
  supplementary coverage, 21, 72, 120-128
Health Interview Survey, 57
Health Maintenance Organization Act (*see* Legislation)
Health maintenance organizations (HMOs)
  ambulatory physician services in, 39-40
  ancillary services in, 40
  barriers to initiation of care in, 63
  in California, 36, 114-116
  capitation payments to, 19
  competition among, in the Rochester, N. Y., area, 107
  enrollment in (nationally), 36

  in Denver, Colo., 116-117
  v. fee-for-service practices, 65-66
  in Hawaii, 108-111
  individual practice associations (IPAs), 19, 36, 37, 42, 48, 65
  legal requirements for, 50-51
  managerial technologies in, 41-42
  Medicare/Medicaid and, 66
  in Multnomah County, Oreg., 111-112
  in Minneapolis-St. Paul, 112-114
  preferred provider organizations (PPOs) as alternative to, 116
  prepaid group practices, 19, 36
  preventive services in, 40, 65
  provider selection in, 64
  quality of care compared with other settings (table), 65
  quality of care in Hawaii HMOs, 110-111
  of Rochester, N. Y., 107-108
  surgery rates in, 38-39
  types of, 19
Health Program Advisory Committee, 83
Health Systems Agencies (HSAs), 50, 68, 77
  development of consumer information by, 79
Health Systems Agency of Northern Virginia, 77
  description, 129-131
Health Watch, 107
Hemorrhoidectomy, 39
Hennepin County (Minnesota) Medical Society, 113
HMO Colorado, 116-117
HMO Minnesota, 113
HMOs (*see* Health maintenance organizations)
Honeywell Inc., 113
Howard University Hospital, 130
  cardiac mortality rates in, 131
HSAs (*see* Health Systems Agencies)
Hysterectomy, 39

Infectious diseases, 26
Institute of Medicine, 132
Institutional Differences Study, 57
Insurance (*see* Health insurance)
Intergovernmental Health Policy Project, 129
Internal Revenue Service, 62
Joint Commission on the Accreditation of Hospitals, 134
  assessment of laboratory test accuracy by, 77

Kaiser Foundation, 109
Kaiser Health Plan of Colorado, 116
Kaiser-Permanente Plan, 38, 39, 40, 41, 42, 43, 45, 67, 107, 108, 109, 111
  growth in California, 115
  origin of, 115
  quality of care, 65-66
Kidney dialysis, 26
King, Patricia, 84

Lashof, Joyce C., 84
Lee, Sidney S., 84
Legislation
  California Waxman-Duffy Prepaid Health Plan Act, 118
  Clayton Antitrust Act, 122
  Consumer Credit Protection Act, 135
  establishing Professional Standards Review Organizations (PSROs), 132
  Fair Credit Billing Act, 135
  Federal Aviation Act, 136
  Federal Employees Health Benefits Act, 85, 86, 87, 102
  Federal Trade Commission Act, 122
  Freedom of Information Act, 132
  Health Maintenance Organization Act, 50, 71, 118, 119
  Individual Accident and Sickness Insurance Minimum Standards Act, 123
  McCarran-Ferguson Act of 1945, 122
  Minnesota Health Maintenance Organization Act, 113
  National Health Planning and Resources Development Act, 129
  Packers and Stockyards Act, 132
  Securities and Exchange Act, 136
  Sherman Antitrust Act, 122
  Social Security Amendments of 1965 (establishing Medicare and Medicaid), 120
  Social Security Amendments of 1980, 123
  Truth in Lending Act, 80, 135-136
Lepper, Mark, 84
Litigation, 105
Little, Arthur D., 127

Mahoney, Margaret, 84
Maryland
  Department of Health and Mental Hygiene, 134
  Health Services Cost Review Commission, 77, 133
  Hospital Utilization Reporting System, 133
  State Medical Society Admissions Review Program (MARP), 133
Maryland National Bank, 134
Maternal and Child Health Services, 132
Mayo Clinic, 38
MedCenter Health Plan of Minneapolis-St. Paul, 112, 113
Medicaid, 17, 37, 39, 43, 47, 48, 50, 107, 109, 111, 112, 114, 132, 134
  coverage variations, 68
  effects of cost sharing on, 62
  establishment of, 120
  health maintenance organizations serving recipients, 66
  Medi-Cal (California Medicaid program), 35, 60, 64, 118-119
  options of beneficiaries, 72
Medical care
  acute, 26
  choice of technologies, 64
  competition effects on quality of, 55-68
  consumer sovereignty in, 27

  expenditures for, 42-43
  initiation by consumers, 63, 75
  market for, 26-27, 42
  perspectives on quality of care dimensions (table), 56
  price elasticity of demand for (table), 35
  selection of providers, 64, 75
Medical technology
  ambulatory physician services, 39-40
  ancillary services, 40
  behavioral theories on adoption of, 32
  and competition in health care, 32, 45-50, 64
  consumer selection of, 72-73
  cost sharing effects on choices, 61-62
  definition of, 4
  diffusion of, 31-33
  hospitalization, 37-38
  inappropriate use of, 27-28
  incentives related to use of, 17-19
  managerial, 41-42
  patient cost sharing and use of, 33-35
  policy implications for, 50-51
  preventive services, 40
  research on use in comprehensive care organizations, 36-43
  research on use with greater patient cost sharing, 33-35
  selection by patients, 72-73
  surgery, 38-39
  use and innovation of, 31-50
Medicare, 12, 17, 21, 22, 37, 38, 43, 58, 79, 98, 101, 107, 108, 109, 114, 123, 132, 134
  comparison with Federal Employees Health Benefits Act, 87
  complexity of coverage by, 79
  effects of cost sharing on, 63
  establishment of, 120
  Federal standards for State regulation of supplementary insurance (table), 124
  gaps in coverage, 120
  health maintenance organizations serving recipients, 66
  information provided by, 78
  options for beneficiaries, 71-72
  supplementary medical insurance for beneficiaries, 120-128
Medigap insurance (*also see* Health insurance, supplementary coverage)
  Federal legislation to create, 123-125
  State regulatory action on, 125-127
Metropolitan (D.C.) Tertiary Care Task Force
  assessment of cardiac surgery and catheterization in the Washington, D.C. area, 130
  guidelines on cardiac mortality, 130-131
Mike, Joseph C., 123
Minneapolis-St. Paul, 112-114
Mitchell, Susan M., 123
Monroe County (New York) Medical Society, 107
Montgomery County (Maryland) Department of Health Systems Planning, 130
Mosteller, C. Frederick, 84
Multnomah County, Oreg., 111-112

Nader, Ralph, 132
National Association of Employers on Health Maintenance Organizations, 113
National Association of Insurance Commissioners (NAIC), 123
National Capital Medical Foundation (Washington, D.C., PSRO), 132
National Commission on Health Manpower, 65
National Credit Union Administration, 136
National Health Interview Survey, 95
National Institutes of Health Medical Center, 130
National Medical Care Expenditure Survey, 35
National Medical Care (NMC), Inc., 129
National Naval Medical Center, 130
Nicollet-Eitel Health Plan (Minnesota), 113
Northern Virginia Directory of Physicians, 129-130
Northern Virginia Medical Society, 129

Office of Economic Opportunity, 107
Office of Personnel Management (OPM), 76, 77, 87, 90, 101, 102, 103
  reduction of benefits for Federal Employees Health Benefits Program, 105
Office of Technology Assessment (OTA), 67, 71
  definition of medical technology, 4
  Health Program Advisory Committee, 84
  Strategies for Medical Technology Assessment (previous report), 3
  organization of this report, 13-14
  study methods used for this report, 83
Olmstead Medical and Surgical Group, 38
Open-heart surgery, 44
Oregon Physician Services Plan, 111, 112
Organ banks, 44
OTA (see Office of Technology Assessment)

Palo Alto Medical Clinic, 34, 37
Patients (*see* Consumers)
Policy implications, 12
  competition and care quality, 67-68
  competition and medical technology use and innovation, 50-51
  competition and private sector provision of information, 78-79
  competition and public sector provision of information, 79-80
Prepaid health plans (PHPs), 118
Prepaid group practices, 39
Professional Standards Review Organizations (PSROs), 58, 68, 101, 107, 114
  background of, 132-133
  Baltimore City PSRO, 133-134
  data compiled by, 77
  development of consumer information by, 79
  recommendations of the Institute of Medicine on information disclosure by, 132

Project Health, 51
  evaluation by A. D. Little, 111-112
Prospective reimbursement, 44
PSROs (*see* Professional Standards Review Organizations)
Public Citizen Health Research Group, 132

Quality
  competition effects on, 55-68
  current levels of, 57-58
  dimensions of, 55-56
  intended levels of, 58-59
  research on, 59-66

Rabkin, Mitchell, 84
Radiotherapy, 44
Railroad Retirement System, 120
Ramsey Health Plan of Minneapolis-St. Paul, 112, 113
Rand Corp., 33-34, 47, 59
Renal dialysis, 44
Research
  on innovation, 43-45
  on care quality, 59-66
Rice, Dorothy P., 84
Riegelman, Richard K., 84
Robb, Walter L., 84
Robbins, Frederick C., 84
Rochester, N. Y.
  alternative delivery systems in, 107-108
  Genesee Valley Group Health Association of, 107
  Health Network, 107
  Health Watch, 107
Ross-Loos Medical Group (California), 115

Safeco Insurance Co., 115
Saskatchewan, Canada, 35
SEC (*see* Securities and Exchange Commission)
Securities and Exchange Commission (SEC), 80
  divisions of, 137
  as a model of information disclosure, 12, 136-138
SHARE Health Plan of Minneapolis-St. Paul, 112, 113
Smith, Adam, 25
Social Security, 76, 120
Stanford University, 60
State Health Planning and Development Agencies (SHPDAs), 129
Stevens, Rosemary, 84
Strategies for Medical Technology Assessment, 83
Supplementary Health Insurance Panel, 123
Surgery, 39
Sybron, 107

Tonsillectomy, 39

University of Michigan, 110
University of Oregon, 111

Varicose vein surgery, 39
Vertical integration, 43
Veterans Administration, 110
  Washington, D.C., hospital, 130

Walter Reed Army Medical Center, 130
Washington (D.C.) Adventist Hospital, 130
  cardiac mortality in, 131
Washington Consumers' Checkbook, 76, 78, 79, 104
Washington (D.C.) Hospital Center, 130
White, Kerr L., 84
Woodyard, William H. L., III, 123
Wyatt, Ronald, 109

Xerox Corp., 107
X-Ray therapy (*see* Radiotherapy)

Younger, Tera S., 123
Yuen, Albert H., 108

Office of Technology Assessment

The Office of Technology Assessment (OTA) was created in 1972 as an analytical arm of Congress. OTA's basic function is to help legislative policymakers anticipate and plan for the consequences of technological changes and to examine the many ways, expected and unexpected, in which technology affects people's lives. The assessment of technology calls for exploration of the physical, biological, economic, social, and political impacts which can result from applications of scientific knowledge. OTA provides Congress with independent and timely information about the potential effects—both beneficial and harmful—of technological applications.

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